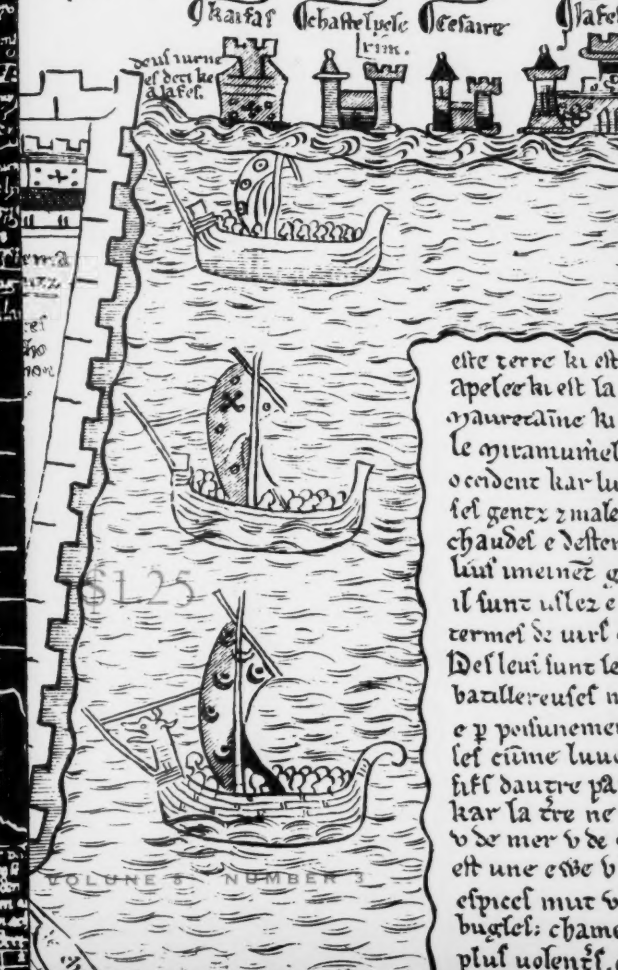


cize ot let pur
 neet haut chel
 ur au seigneur
 uale cune cranz
 t de efflungt.



Autumn 1955

par ciel ki ore sunt en la subiection
 furent iadis tuzet crestienel par la p'di
 ne Johan euuangeliste e del autres apottle
 deu. Maist pur l'entuschement q'ahu
 ale honettete ne enseigne ne reddur d'icel
 el charneles e ke plest au corz: est ia tute
 e pasture au diable am...
 Aples cre lence e de p'assur...
 e tuzet pur tute le m'nd estorer le pou...
 et e en l'entechement...
 e tuzet pur tute le m'nd estorer le pou...
 et e en l'entechement...
 e tuzet pur tute le m'nd estorer le pou...
 et e en l'entechement...



este terre ki est
 apelee ki est la
 yauweatine ki e
 le myramumeli
 occident kar l'un
 sel gentz z malel
 chaudel e destem
 lunt meinet ge
 il sunt ullez e r
 termel de uul e
 Des leui sunt sel
 batallereusel ne
 e p'posunemen
 sel etune luer
 fikt dautre par
 kar la tre ne p
 v de mer v de ei
 est une eue b h
 espiceel mut su
 bugtel: chamer
 plus uolenel. cl

EXCAVATIONS AT NUZI, Volume VI

THE ADMINISTRATIVE ARCHIVES

Selected and copied by ERNEST RENÉ LACHEMAN

The excavations at Nuzi unearthed, among other important material, more than four thousand Hurrian, Cappadocian, Sumerian, and Akkadian cuneiform tablets. The present volume consists largely of inventories of various kinds of material objects: a good many are part of the official archives found in the main mound of Nuzi and in the suburban dwelling of Prince Shilwa-teshup. The first part includes documents relative to the army, beginning with an order from the mayor of Tassuhhe directing precautionary measures against foreign invaders—a kind of "Civil Defense" plan. Following it is an important series of texts describing armor and armaments, musters of soldiers and equipment, lists of chariots and horses. The next group of texts includes inventories of furniture, garments, leather and wood objects, jewelry, metal and other objects, receipts of grain, oil, and the like. *Harvard Semitic Series, 15.*

Portfolio consisting of 16-page brochure, 177 plates in box with tie-on cover.

\$6.00



Through your bookseller, or from

HARVARD UNIVERSITY PRESS

44 Francis Avenue

Cambridge 38, Massachusetts

THE MEDIAEVAL ACADEMY OF AMERICA

was founded in Boston in 1925 and incorporated under the laws of the Commonwealth of Massachusetts "to conduct, encourage, promote and support research, publication, and instruction in mediaeval records, literature, languages, arts, archaeology, history, philosophy, science, life and all other aspects of mediaeval civilization by publications, by research, and by such other means as may be desirable, and to hold property for such purpose." Membership in the Academy is open to all persons interested in mediaeval studies.

SPECULUM, published quarterly since 1926 by the Mediaeval Academy of America, presents articles and reviews concerned with mediaeval architecture, armor, fine arts, geography, heraldry, law, literature, music, numismatics, philosophy, science, and social and economic institutions of the Middle Ages.

THE MEDIAEVAL ACADEMY OF AMERICA

1430 MASSACHUSETTS AVENUE, CAMBRIDGE 38, MASSACHUSETTS



ARCHAEOLOGY

A MAGAZINE DEALING WITH THE ANTIQUITY OF THE WORLD

VOLUME 8 NUMBER 3

SEPTEMBER 1955

Contents for Autumn 1955

| | | |
|---|-----|---------------------|
| By Their Maps You Shall Know Them | 146 | WILLIAM H. STAHL |
| Ball Courts of Middle America and Arizona | 156 | ALBERT H. SCHROEDER |
| The Castle Hill of Ptuj | 162 | JOSIP KOROSEC |
| The Shanidar Child | 169 | RALPH SOLECKI |
| The Oriental Collections of the Art Institute of Chicago | 176 | JACK SEWELL |
| The Origins of the Art of Knitting | 184 | MILTON N. GRASS |
| Grave Robbers' Leavings | 191 | RODNEY S. YOUNG |
| Thasos: Cultural Crossroads | 198 | JEAN POUILLoux |
| Archaeological News | 205 | |
| Brief Notices of Recent Books | 212 | |
| New Books | 216 | |

ARCHAEOLOGY is indexed in the ART INDEX

ARCHAEOLOGY is published quarterly in March, June, September and December at 73 Main Street, Brattleboro, Vermont, by the ARCHAEOLOGICAL INSTITUTE OF AMERICA, 608 Library Building, University of Cincinnati, Cincinnati 21, Ohio.

Entered as second class matter at the post office at Brattleboro, Vermont, on July 11, 1952, under the Act of August 24, 1912.

Subscription, \$5.00 per volume. Single numbers, \$1.25. Members of the ARCHAEOLOGICAL INSTITUTE OF AMERICA may choose ARCHAEOLOGY as a perquisite of membership. Subscriptions should be addressed to the Business Manager at 608 Library Building, University of Cincinnati, Cincinnati 21, Ohio.

Manuscripts, communications, books for review, and advertisements should be sent to the Editor at 211 Jesse Hall, University of Missouri, Columbia, Missouri.

Copyright 1955 by the ARCHAEOLOGICAL INSTITUTE OF AMERICA. All rights reserved.

Printed by The Vermont Printing Company, Brattleboro, Vermont.

| | |
|--------------------------|--|
| EDITOR | Gladys Davidson Weinberg |
| CONSULTING EDITOR | Jotham Johnson |
| ASSOCIATE EDITORS | J. Alden Mason Winifred Smeaton Thomas Margaret Thompson |
| EDITORIAL ADVISORY BOARD | Bernard V. Bothmer Linda S. Braidwood John L. Caskey Kenneth J. Conant Hugh Hencken Dorothy K. Hill Casper J. Kraemer, Jr. George E. Mylonas Robert L. Scranton A. W. Van Buren |
| ART DIRECTOR | Charles S. McGee |

• The author is Associate Professor of Classics at the University College of New York University. His major interest—Greek and Roman science, especially astronomy, geography and medicine—led him to the subject matter of this article.

BY THEIR MAPS YOU SHALL KNOW THEM

By WILLIAM H. STAHL

IT would be hard to find a truer indicator of the intellectual level and mental outlook of a people in any given period than the way in which their map-makers conceived of the world about them and represented it on maps. To some their capital city was the center of a world which extended not far beyond the horizon; to others, fired with religious enthusiasm, maps were merely to be road-guides for making pilgrimages to Jerusalem or Rome.

The theoretical-minded Greeks regarded cartography as a mathematical science and understood that maps could attain accuracy only if terrestrial positions were determined from observations of the heavens. To the practical Romans correct location by longitude and latitude was of no importance; in fact they did not much care about gross distortions of land masses or even about directions. North or south were of course related to temperature ranges, but if a gen-

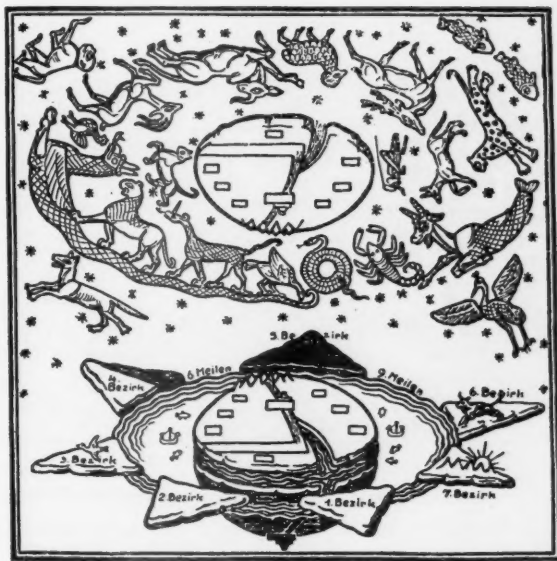
eral or a provincial administrator wanted to learn about climatic conditions, he could consult some descriptive geography, military history, or official report. He referred to a map to find the mileage of a contemplated journey, the distance from the golden milestone in Rome, where the highway crossed rivers, and what sort of accommodations the towns along his route would afford. Someone has said that if one wanted to point to the essential difference between the Greek and Roman character, all he need do is to contrast Eratosthenes, who ascertained the size of the earth from the stars, with Marcus Agrippa, who calculated the length and breadth of each province from figures on milestones.

The practical importance of maps in daily life and the conduct of business in early Babylonia is evidenced by hundreds of surviving clay tablets with plans of districts, towns, town walls, estates and fields, temples and houses, and military camps. Some of



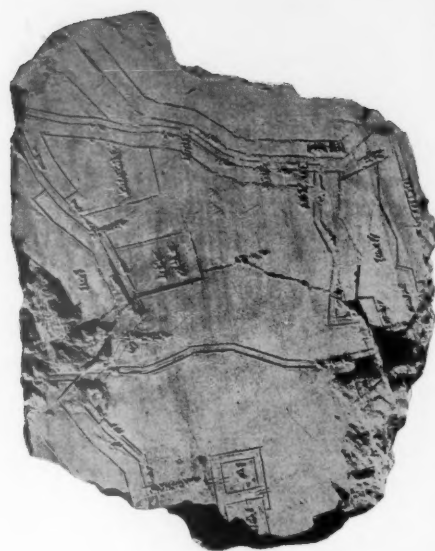
1 Babylonian map of the world. From *Cuneiform Texts from Babylonian Tablets* (London 1906) Part XXII, Plate 48. By permission of the British Museum.

them date from the middle of the third millennium B.C. Besides these there is an interesting map of the world (Figure 1) from the Persian period which gives a fair conception of Babylonian cosmography at that time. The accompanying commentary explains that this is a map of the "Seven Islands" lying between the "Earthly Ocean," called the "Bitter River," and the "Heavenly Ocean." The signs of the zodiac, belonging to the Heavenly Ocean, are enumerated in the text (Figure 2). Beyond the Earthly Ocean are seven regions, the fifth bearing the legend, "Where the sun is not seen," the fourth, "Semi-obscurity reigns," and the seventh, "The sun rises." (These translations are by Eckard Unger, "Ancient Babylonian Maps and Plans," *Antiquity* 9 [1935] 314.) The cartographer has recorded distances between some of the regions. Babylon is a little above the middle of the map and the Euphrates River runs through



2 Unger's reconstruction of the Babylonian map of the world, showing "Seven Islands" lying about Babylon and the seven regions beyond the "Heavenly Ocean." From *Atlantis* (Berlin) April 1932, page 246.

MAPS continued



3 Clay tablet showing a plan of Nippur. This tablet helped excavators locate and identify structures in the area. From *Excavations at Nippur*, by C. S. Fisher (Philadelphia 1905) Plate 1.

it. The islands refer to neighboring cities, not arranged in geographical order, however, and the seven regions refer to foreign countries. The legends on the fourth and fifth regions show that the Babylonians had heard about diurnal darkness and twilight in northern latitudes during the winter season.

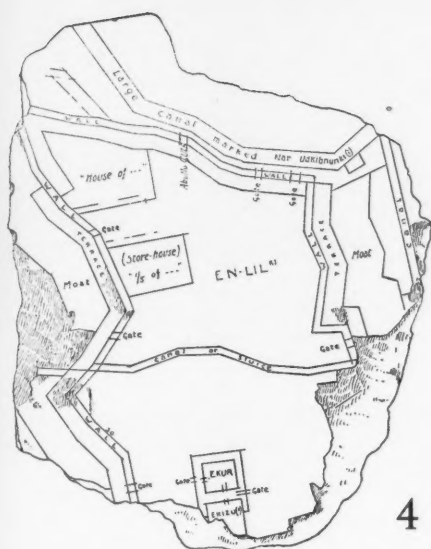
Of the many surviving Babylonian plans the most interesting is the tablet (Figure 3) containing a plan of the inner city of Nippur, unearthed by an expedition of the Museum of the University of Pennsylvania, and used by the excavators to assist in locating and identifying the parts of the temple complex to which the plan relates. To appreciate its accuracy, compare the delineation of the tablet (Figure 4) with Clarence Fisher's plan of Nippur after excavations were completed (Figure 5). Certain conventions were carefully observed by the draftsman. Double lines represent enclosing walls and single

lines the walls of buildings. The reason for the double line about the court of Ekur (Figure 4) was made clear when excavation revealed that this court had been enclosed by a double wall. Note that the double cross-lines representing gates cut across the double lines of the enclosing walls but are cut separately through each of the walls of the court of Ekur.

Greek geography and cartography, like other branches of Greek science, reached their highest level of development at Alexandria late in the Hellenistic age. The late-comers accumulated the data of their predecessors, added certain refinements, and when they combined the whole into comprehensive systems produced works which had canonical authority for nearly fifteen hundred years. One man, Ptolemy (*floruit* ca. A.D. 140), marks the culmination in two fields, astronomy and geography, and like his counterpart in the field of medi-

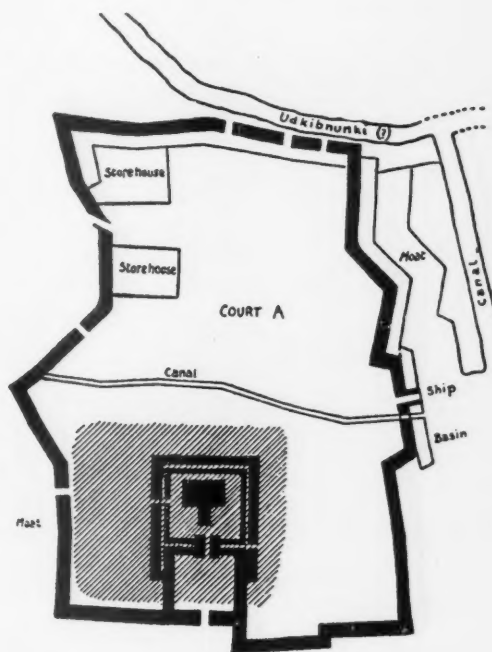
cine, Galen, achieved a reputation for infallibility and completeness. As soon as it was recognized that their works were erroneous, modern science was born, a vigorous babe because of its puissant antecedents. Ptolemy's *Geography* held the same undisputed sway in the study of the earth that the Ptolemaic system had in the study of the heavens. So great was his authority that maps in the "Ptolemaic style" continued to appear in atlases more than a century after exploration had exposed Ptolemy's misconceptions.

Ptolemy never intended his work to be regarded as the final authority on geographical matters. It was meant to be an instruction book in scientific map-drawing, but because his book listed over eight thousand names of towns, tribes, mountains and rivers, pinpointed to minutes and seconds by geographical coordinates, a mistaken notion prevailed that it was a sound scientific treatise. The principles of



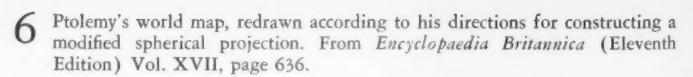
4 Delineation explaining the plan of Nippur, with translations of captions. From *Excavations at Nippur*, Plate 1.

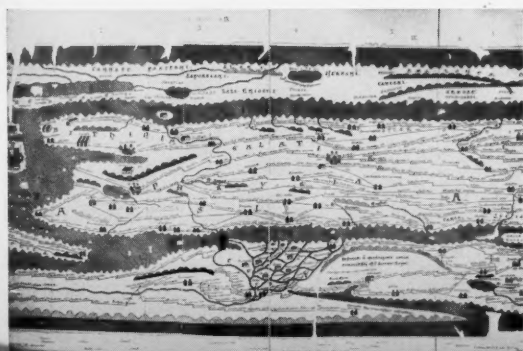
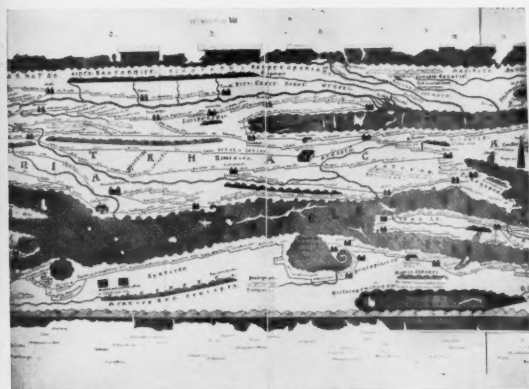
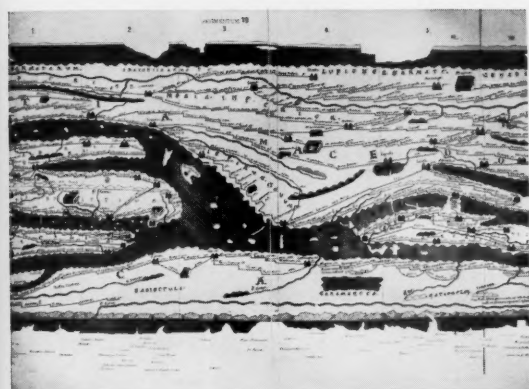
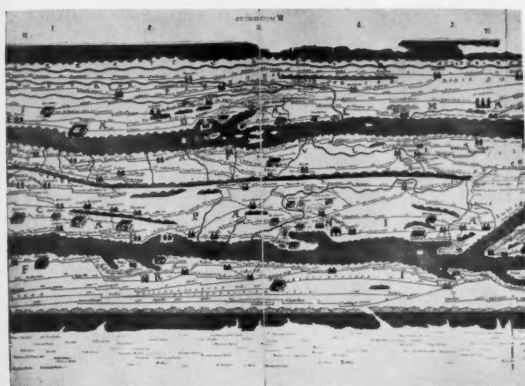
geodetics had been set forth by Ptolemy's predecessors. Hipparchus had shown the necessity of basing terrestrial coordinates upon celestial observations. Instruments were in use that could furnish fairly satisfactory estimates of latitudes of places by measuring the sun's declination. Even so, very few figures of latitudes were available in Ptolemy's time. For determining longitudes no adequate method could have been devised until accurate timepieces came into use, a development which did not occur until the eighteenth century. Hipparchus had suggested the method of determining longitudes by calculating from the difference in timing of an eclipse observed at two widely separated places, but the record of the eclipse before the battle of Arbela which was also observed at Carthage is a lay observation with no scientific value. In short, although Greek mathematicians understood the principles of scientific cartography, in



5 Fisher's plan of Nippur after excavation. Compare figure 4. From *Excavations at Nippur*, page 10.

MAPS continued





- 7 Segments VI-IX of the Peutinger Table, extending from Central Italy to the Island of Rhodes. Note the canal-like appearance of the Adriatic, Mediterranean, and Black Seas, the east-west direction of the Danube (top of segments VI-VIII) and Nile (segments VIII, IX), and the peculiar form of the Syrtis Maior and Minor. By permission of the Staatsbibliothek, Vienna.

practice only a few latitudes and no longitudes had been determined by astronomical observation.

What, then, was the basis for Ptolemy's seemingly precise location of eight thousand geographical names? In the absence of reliable geodetic observations he had to fall back on the same rough data his predecessors had used: estimates of distances according to time consumed on overland voyages or according to highway mileages as recorded in the itineraries and official reports. Distances measured by surveyors along Roman highways were fairly reliable, but a geographer could be misled by failing to allow on his maps for

changes in direction. As a result we find such grievous errors as the plotting of the same town in two places or the use of two names for the same place to cover up an error. Mariners' estimates of distances at sea were notoriously exaggerated because of storms and changes in the wind.

Such faulty data produced maps which belied the scientific principles set forth in his instructions. Ptolemy grossly overestimated (see Figure 6) the length of the Mediterranean (62° of longitude instead of the actual 42°) and the breadth from Massilia to a point opposite on the North African shore (11° of latitude instead of the real $6\frac{1}{2}^\circ$). His principal parallel of 36°N. , which he passed through the Straits of Gibraltar, Rhodes, and the Gulf of Issus, involved numerous errors such as the intersection of Sardinia and the location of Carthage $1^\circ 20'$ south of the parallel instead of its actual position 1° north of it. Other egregious mistakes were the placing of Scotland almost at right angles to the rest of the island, the faulty angle of the Italian peninsula, an east-west direction for the three promontories of Chalcidice instead of an almost north-south direction, the location of the Black Sea area too far north (Byzantium in the same latitude as Massilia) and the enormous size of the Sea of Azov which placed its northern extremity in the latitude of the south shore of the Baltic, the prone instead of upright position of the Caspian (this error still appears on seventeenth century maps), the failure to discern the triangular shape of India, the gross overestimate (by fourteen times) of the size of Ceylon, and the complete enclosure of the Indian Ocean.

Another basic error drastically affected Ptolemy's entire mapping project: he adopted Posidonius' figure of 18,000 miles for the earth's circumference instead of Eratosthenes'

nearly correct figure of 25,000 miles. Thus a degree amounted to fifty miles instead of seventy. The extent of his known world, from the Fortunate Islands to Sera in China, covered 180° of longitude instead of an actual 130° . Note that on his map China, at the 180th meridian, extends as a great land mass from the Arctic Circle to below the equator. Up to the time of Columbus the assumption persisted that this mass projected far out into what we know as the Pacific Ocean. A globe of 1492 extended Ptolemy's mainland 60° eastward to the 240th meridian. Ptolemy's two errors of assuming a smaller circumference of the globe and a vast extension eastward of the Asiatic mainland gave Columbus the confidence necessary to undertake a westward sailing to India.

On Ptolemy's behalf it must be said that he does not deceive his readers about the twofold character of his book: its soundness in theory and its defaults in practice. Ptolemy admitted that his data were defective but readers ignored his statements because of the apparent scientific character of his work. Good and bad, his *Geography* was by far the most influential book ever written on the subject. It set the standard for scientific spirit if not for accuracy. Nowhere on his maps do we find wind gods, vignettes, and monsters such as decorated maps up to the modern period and nowhere in his text does he give space to the tall tales of travelers such as the prodigies found in geographies on Africa up to Livingstone's day. The methods he used to project the spherical surface of a globe upon the plane surface of a map differ little from those in use today. In all, twenty-seven maps accompany the manuscripts of the text of the *Geography*, a map of the known world and twenty-six regional maps. Heated argument has raged up to the present as to whether these maps were prepared under the direction of Ptolemy

or at some later date. To us it makes little difference because the maps that we have correspond in all respects to Ptolemy's text and list of eight thousand positions. It is thus correct to regard Ptolemy's atlas as the sole surviving example of ancient Greek cartography, as complete and intact as it was in Ptolemy's day.

We also have one map from Roman antiquity. To the Romans a map was a guide in getting from place to place; it should contain such necessary information as distances, accommodations, highway junctions and boundaries of provinces. Because such maps were essential in military operations and provincial administration, Augustus directed Marcus Agrippa to map the entire empire, a project that was over twenty years in progress. When it was completed, a large master map was put upon a wall of the Porticus Vipsania in Rome five years after Agrippa's death, and was used as the archetype for copies distributed to generals and top-level administrators. Agrippa's map gave mileages anywhere in the empire, indicated highway and river junctions, the location of installations of strategic and logistic importance, and even recreational facilities such as baths and spas. The map was accompanied by a commentary prepared by Agrippa and an elaborate key to the symbols used. From this map were produced in great volume two types of travel guides: *itineraria adnotata*, of which several examples have survived, and *itineraria picta*, of which the Peutinger Table is the sole example. The former were lists of places with their mileages, arranged according to highways; the latter had the added advantage that they represented highways graphically, showing crossings of other roads and rivers, with vignettes or symbols indicating installations and facilities.

The Peutinger Table (Figure 7), regarded by many as the sole surviv-

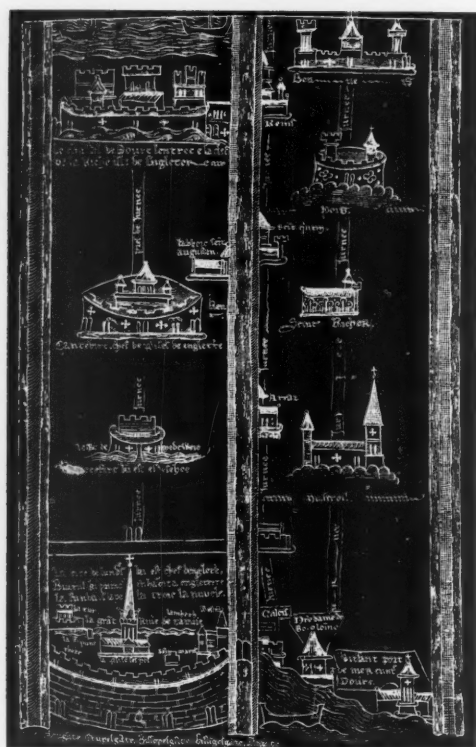
MAPS continued

ing representative of Agrippa's elaborate project, is an intensely interesting document. It is a parchment roll twenty-one feet long and one foot wide, obviously meant to be folded or rolled in a portfolio. Its eleven sheets include the territory from the eastern tip of England and the Pyrenees to China and the shores of the Eastern Ocean. Originally the map had another segment comprising the British Isles and the Iberian peninsula. That the world was flattened almost like a pancake, that the Mediterranean resembled a canal, and that great rivers like the Nile, Danube and Rhine were forced to take an east-west direction did not bother a practical Roman.

This map is an eloquent testimonial to travel conditions at the height of the Roman Empire, which were not to be surpassed until the age of Napoleon and the introduction of steam navigation saw better conditions on land and sea. The Table contains 534 illustrations: 311 in Europe, 62 in Africa, and 161 in Asia. The three imperial residences of Rome, Constantinople and Antioch receive special pictorial treatment. Six cities of second rank also have vignettes, with varying numbers of towers in their walls: Aquileia (6), Ravenna (5), Thessalonica (5), Nicomedia (8), Nicaea (6) and Ancyra (7). Most towns are indicated by two towers, but there are over forty varieties of this type of symbol. Some towers are domes, others are pointed, some have knobs on top, some are walled, some are on platforms, others on level ground, and the doors and windows are arranged in great variety. Thirty-three temples are represented, and thirty-eight spas and bathing establishments indicate Roman fondness for bathing. Illustrations representing baths are quadrangular in shape, with the pool in the center and three, four or five doors on the side, and numerous variations at the front. A few lighthouses and harbors are clearly in-

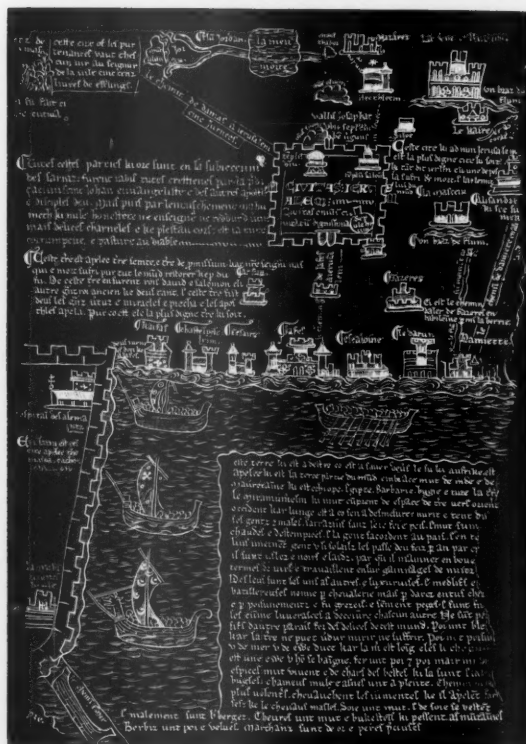
dicated, but other symbols have not been successfully identified. All in all, the map is a remarkably detailed compilation covering over 50,000 miles of paved highway. A glance at its full extent will make it easier for us to understand the remarkable speed and sense of security with which Roman officials traveled all over the empire. A messenger carrying news of Nero's death to Galba covered 332 miles of Spanish highways in thirty-six hours.

The Peutinger Table has been the subject of much study, including four elaborate editions by Mannert, Desjardins, Konrad Miller and Wartena, yet the basic problems are far from solution. The date of the original compilation is a vexing question. Mannert argued for a period between Alexander Severus and the end of the third century; Miller set the date at A.D. 365; Desjardins sensibly pointed out that the map's features referred to various periods between Augustus and Justinian. Other features of religious interest were thought to have been added in 1265 by a monk of Colmar. Wartena's attempt to trace a direct connection to Agrippa's wall map is now regarded as unsuccessful, but then what other ultimate source but the Agrippa map could there have been for the thousands of minute details on the Peutinger Table? The question of the vignettes and illustrations is the most intriguing of all. Are they truly symbolic of types of towns and accommodations and was there once a key to the symbols? Agrippa's map had symbols and a commentary. Close resemblances between the Peutinger illustrations and those found in the *Notitia Dignitatum* and *Corpus Agrimensorum* have been pointed out. Schulten believed that the designs of the *Notitia* were simplified copies of original *formae* in imperial archives of the first century. Moreover, why should the illustrations show such a wide variety of setting and shape of buildings and location



8 Crusader Strip Map—London to Jerusalem: Segment I. London is at the lower left, Dover Castle at the upper left, with the Channel crossing at the top and at the bottom of the next strip. From E. F. Jomard, *Monuments de la géographie* (Paris 1862) Plate 5.

9 Crusader Strip Map—London to Jerusalem: Segment IX. The approaches to Jerusalem by land and sea. From *Monuments de la géographie*, Plate 5.

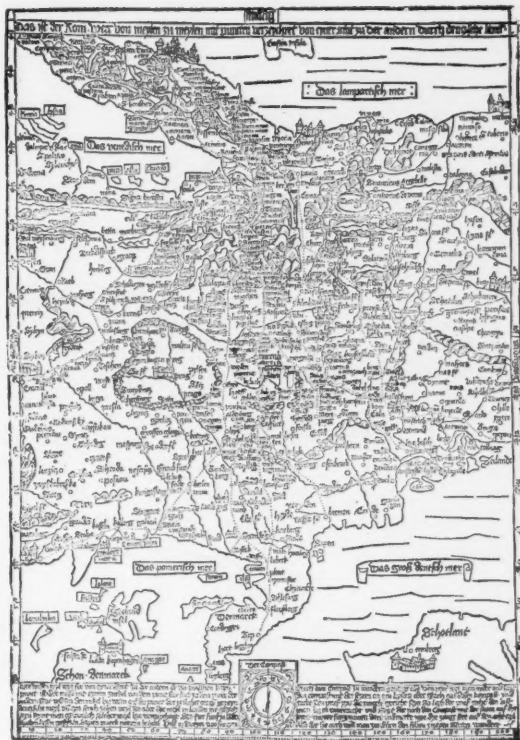


of doors and windows if they were not meant to have application? On the negative side is the unfounded assurance of Miller and others that they had solved the key to the symbols. Another random example of negative evidence may be found in the Nile Delta, where three temples of Serapis and three of Isis are all pictured exactly alike. In my opinion the negative evidence is stronger. Perhaps the ultimate explanation will be that the archetype of the maps of the class to which the Peutinger belongs had symbols with true application, but that in the centuries of transmission illustrations were carelessly copied, lost their meaning and became simply random decorations.

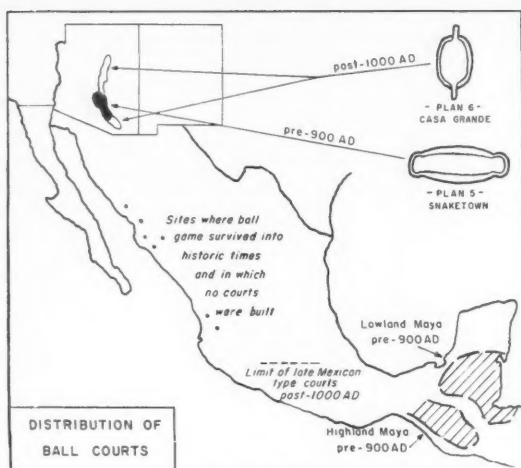
From the beginning of the Middle Ages up to the arrival of scientific cartography there is an abundance of maps that could be introduced to illustrate the point of the title of this paper. Because of space limitations I have chosen two pilgrimage maps—one for Crusaders from England to Jerusalem, the other for pilgrims from Germany and Denmark to Rome for the Holy Year 1500. The former (Figures 8, 9), a strip map in nine segments, enabled Crusaders to identify towns along the way by the shapes of castles and cathedrals, with their crenelated walls and towers.

Etzlaub's *Romweg* (Figure 10), a woodcut map dated shortly before 1500, is said to be the earliest printed road map. It is assumed from the title and the conjectured date that the map was prepared to guide pilgrims going to Rome for the Holy Year. Dots along the highways represent one-mile intervals. A check of one highway from Jutland to Rome via the Brenner Pass revealed an error of only $2\frac{1}{2}$ per cent. The *Romweg* map, a vast improvement over the mediæval map, substantially recovered the approximate correctness and detail of ancient Roman highway maps.

MAPS continued



10 Etzlaub's *Romweg*. The map is drawn upside down, with Denmark at the bottom and Rome at the top. By permission of the British Museum.



1. Map showing distribution of ball courts.

By Albert H. Schroeder

BALL COURTS AND BALL GAMES

THE FIRST REFERENCES to ball courts in America and the game played in them are found among the writings of the Spanish chroniclers, who observed these features in use during the early sixteenth century when the conquistadores entered Central America and southern Mexico.

They described the courts as consisting of two walls, each about $8\frac{1}{2}$ feet high and from twenty to thirty feet apart, with a playing floor between them measuring some forty to fifty feet in length. Across the middle of the court was a painted line and in the middle of each wall a stone ring with a hole large enough to admit the solid rubber ball used by the players. Two opposing teams faced one another on the court and the team which put the ball through its ring won the game as well as various items wagered or set up as prizes. However, points were scored in other ways, for it was not an easy task to get the ball through the ring, since the players were not allowed to use their hands, only their buttocks, which were protected with heavy padding, or their knees.

Aside from late writings referring to the ball game, little is heard of these courts until the nineteenth century when archaeologists, in the course of investigations in Middle America, noted ruined structures similar in plan to the court described above. Detailed studies revealed

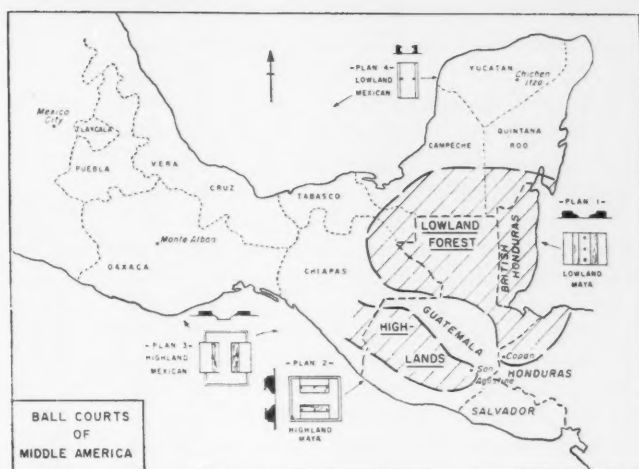
that these features were ball courts.

It was not realized until much later that ball courts existed in other regions. In the late nineteenth century Dr. Frank H. Cushing noted features in southern Arizona which he referred to as sun temples. In 1935 Frank Pinkley suggested they were ball courts. His suggestion was confirmed by Gila Pueblo at Snaketown, Arizona, where two courts were excavated. Dr. Emil W. Haury reported upon these in 1937. Since that date over sixty ball courts have been recorded in Arizona. None has been observed elsewhere in the United States nor have any been definitely identified between the Mexico City area (Tula de Hidalgo) and the Arizona-northern Sonora region. Thus, the courts of Arizona are an isolated group far removed from those of Middle America (Figure 1).

Archaeological studies have demonstrated that the ball courts differ in detail between, as well as within, the various regions where they occur—Arizona, southern Mexico, Honduras and Guatemala. In some cases these differences are thought to have resulted from local changes and in other cases to have been brought about by influences from neighboring people.

The earliest ball court so far recognized is one at Copan in southwestern Honduras (Figure 3), which has been assigned to the early Classic Maya Period, some time prior

• The author, who is an archaeologist with the National Park Service, has had extensive field experience, particularly in Arizona, where he is stationed at Southwestern National Monuments Headquarters in Globe. He has published a number of papers on archaeological and historical subjects largely pertaining to Arizona.



2. Map of the ball courts of Middle America.

MIDDLE AMERICA AND ARIZONA

to A.D. 600.* The type of court that occurs at Copan is most commonly found throughout the tropical rain forest region of Guatemala, southern Yucatan and British Honduras. It exhibits a rectangular, level, stone-paved playing floor built at ground level. Three elaborately carved square or circular stone slabs set along the center line of the floor, one in the center and one near each end, apparently represent floor markers of some sort. On each of the long sides of the playing floor are elevated platforms, the sides of which, paralleling the paved area, slope down toward the playing floor. Though the alignment of the long axis of the floor area is not always reported in literature, it appears usually to be oriented north-south. This type of court, the lowland Maya type, survived to the end of the Classic Maya Period, about A.D. 900-1000 (Figure 2, plan 1).

Possibly earlier, but surely belonging to the late Classic Period (A.D. 600-900), is another type of Maya ball court that occurs in the volcanic highlands of Guatemala, to

the south of the tropical rain forest. This court is in general like that of the lowland Maya, but differs in being completely enclosed by a wall, which also incorporates some extra space at both ends of the playing floor to form end units, and in being oriented in an east-west direction along its long axis (Figure 2, plan 2). Dr. Stephen F. de Borhegyi, who is preparing a detailed trait list of the Guatemala area, has been able to demonstrate that there is another consistent difference between this court, which is herein called the highland Maya type, and the lowland Maya type. The former exhibits tenoned stone heads (Figure 4) projecting horizontally from the side of the flanking platforms, while the latter contains rounded or square floor markers of stone.

During the Classic Maya Period the only exceptions to these two types are found in the semi-arid eastern lowlands situated between the tropical rain forest and the highlands (Figure 2). In this area various combinations of the traits of the two types have been found associated in different courts. One court in this locale, at San Agustine Acasaguastlan, described by Dr. A. V. Kidder and Ledyard Smith, serves as a good example of the mixture that occurred. Another is the earliest court at Copan, which, when remodeled by the natives, made use of stone heads. The presence of these "blends," exhibiting one or

* A.D. 200-600 according to the Goodman-Martinez-Thompson correlation of Mayan dates which I am employing throughout this article. The Spinden correlation is some 260 years earlier than the above.

both ends of the court open or closed, or floor markers with or without stone heads associated, suggests that the lowland Maya and highland Maya types were at least partly contemporaneous. The fact that stone heads, commonly associated with the highland Maya court, were used in the first remodeling of the oldest known court at Copan is a strong indication that the highland Maya type evolved almost as early as the lowland Maya type.

Two other court types replaced those described above, some time after A.D. 1000, after the close of the Classic Period. One is found in the highlands of Guatemala and in southern Mexico and is called the "sunken" or highland Mexican court. The playing floor is below the surrounding ground level (Figures 5 and 6). This type of court resembles the earlier highland Maya type of the same general area but lacks the tenoned stone heads and has platforms which extend outside of the enclosing walls (Figure 2, plan 3). The other type occurs north of the tropical rain forest in the northern savanna region of Yucatan, and in southern Mexico. It exhibits vertical side walls instead of sloping walls and one tenoned stone ring in each wall (Figure 2, plan 4 and Figure 7). These rings are set vertically, not horizontally like a basketball hoop, high up on the upright walls. This court, the lowland Mexican type, survived into historic times and is the one which the Spaniards saw in use.

Some archaeologists believe these late courts developed in the Maya region and spread north into Mexico while others think the Toltec people of southern Mexico introduced the vertical wall and sunken court into the Maya area. More detailed studies are necessary, however, before this aspect can be worked out, particularly since there is suggestive evidence that the highland Maya court may have spread in the late Classic Maya Period into highland Mexico, where it underwent certain changes that may well have led to the development of the Mexican highland and lowland types.

North of the Mexico City area there are no courts that resemble the structure described above. However, Dr. Haury has demonstrated that the large oval depressions in the Hohokam Culture area of southern Arizona contain the elements by which the Middle American courts have been identified: playing floor, flanking walls sloping toward the floor, floor markers and end units—factors which justify their identification as ball courts.

Two types are recognized in Arizona: a large court with end units called the Snaketown type, oriented in an east-west direction along its long axis (Figure 1, plan 5), and a small court, referred to as the Casa Grande type, in which the end units are replaced by small openings and the orientation is north-south (Figures 8 and 9, Figure 1, plan 6). The excavations of Gila Pueblo have demon-



3. Ball court at Copan (Honduras). Note floor markers and stone heads at top of sloping walls.

4. Tenoned stone head of a parrot with a human face in its beak from Kaminaljuyu (Guatemala).



BALL COURTS CONTINUED



5. Sunken ball court at Monte Alban (Mexico).

6. Sunken ball court at Zaculeu (Mexico).



FIGURES 3-6 COURTESY OF DR. STEPHEN F. DE BORHEGYI, STOVALL MUSEUM UNIVERSITY OF OKLAHOMA

strated that the larger court was built in the Santa Cruz phase, about A.D. 800-900, and the smaller court was constructed in the following Sacaton phase, A.D. 900-1150. Excavations by the Museum of Northern Arizona have indicated that the ball courts in the region of Flagstaff, Arizona, all of which are of the small type, date between A.D. 1070 and 1150, thus fitting within the date range of the Sacaton phase.

When the plan of the earliest Arizona court, the Snake-town type, is compared with that of the Middle American courts, it is evident that it bears a closer resemblance to the highland Maya type than to the lowland Maya type of the same period (before A.D. 900). It resembles even more closely the "palangana" or basin type court of Guatemala, about which little is known but which is an oblong basin, generally rectangular with rounded corners, and closed in on all sides, with the transverse walls somewhat lower than the lateral walls. It is perhaps no coincidence that a considerable number of "Mexican" traits diffused into the Southwest to the Hohokam between A.D. 700 and 900. This indicates that the Hohokam avenue of contact with the south was in operation prior to A.D. 900 and that the idea of the ball court could easily have been transmitted to the Hohokam, along with other recognized Mexican traits, during this period. The route from Guatemala must have followed the coastal area, or remained at a reasonably short distance from it, in the region west and south of Mexico City, since the ball court apparently by-passed the Mexico City region until some time after A.D. 1000.

Dr. Ralph Beals, employing historical and ethnological data, has demonstrated that there are definite links between the Indian cultures of southwestern United States and the west coast area of Mexico, and he has suggested that the diffusion of traits that link these two areas operated along the west coast. Dr. John Corbett has further postulated that the west coast route may have been that over which the ball court reached Arizona in prehistoric times. This lane of diffusion is the very same route followed by Fray Marcos de Niza and Coronado, in 1539 and 1540, when these first Spanish explorers to enter Arizona traveled from Culiacan, Mexico into southwestern United States. They made use of native guides and as a result were following the current route of Indian trade and travel. The combination of prehistoric and historical data suggests that the route along the west coast of Mexico was in operation for at least a thousand years and most probably represents the route over which the ball court of the Guatemalan highlands reached the Hohokam of southern Arizona.

Though no ball court structures have been reported along this west coast area, it is in this region that survivals

BALL COURTS CONTINUED



7. The big ball court at Chichen Itza (Mexico). Note the ring in the wall at right.

FIGURE 7 COURTESY OF MRS. MARJORIE LAMBERT, MUSEUM OF NEW MEXICO

of the ball game itself have been reported up into the twentieth century (Figure 1). The game, instead of being played in a special court, is conducted in plazas or marked off areas. Since the late Mexican court employed stone rings through which the players hit the ball, it seems likely that the west coast game, which made use of goals alone, may be more closely related to the prehistoric game as played in Arizona where no stone rings have been recorded with the courts.

There are many points of similarity between the Southwest and Middle America in the history and development of ball courts. The early Maya courts of the Classic Period were restricted to cities which were primarily ceremonial centers, and the courts were not adopted by neighboring groups in Mexico. Apparently the same can be said of the large early Hohokam courts, as they occur only at a few large sites and never were adopted by their

neighbors. I previously postulated that the early court of the Hohokam was not accepted by bordering groups because of a complicated ceremonial ritual that may have been associated, a factor which appears to have applied to the early Maya courts as well.

Between A.D. 900 and 1000 the late sunken and vertical wall type of court developed in Middle America. These were mostly oriented north-south. They were adopted in neighboring areas, and the ceremonial aspects of the game are thought to have been replaced largely by secular motives such as settling political disputes, providing inter-village competition, wagering and sport in general. In the Southwest, some time between A.D. 900 and 1000, the Casa Grande court was developed. Up to about A.D. 1050 it was restricted to the Hohokam area and was oriented north-south. After A.D. 1070, it was adopted by neighboring groups, probably, as I have suggested,

FIGURES 8-9 COURTESY OF THE MUSEUM OF NORTHERN ARIZONA, FLAGSTAFF, ARIZONA

8. The Casa Grande type of ball court at the site of Winona (Arizona).



because of the dissociation of the ceremonial aspects from the game itself as indicated by the loss of the end units and the decrease in size.

In the case of the Maya, secularization or popularization of the ball court and its game seems to have occurred after the collapse of the hierarchical or "priestly" structure of the Classic Period. With the Hohokam, secularization appears to have developed in a period when all aspects of cultural crafts exhibited considerable ornateness, perhaps indicating a decadence in ceremony and ritual.

This situation of two widely separated regions exhibiting ball courts which underwent somewhat similar changes at approximately the same time poses many problems. One might postulate that the ceremonial societies of the Classic Period Maya and of the Hohokam, prior to A.D. 900, might have had several basic traits or features

in common, though differing in degree of complexity. Perhaps the ceremonial rituals were widespread and stretched unbroken from Middle America to Arizona, but ball courts and the ceremony connected with them were not adopted throughout because of certain specialized requirements which may have been lacking in the intervening area. Concentrations of sedentary cultures with a complex ceremonial organization, which may have existed in Middle America and in the Hohokam area of southern Arizona prior to A.D. 900 but were lacking throughout northern Mexico at this same time, may have been the factor that determined the presence or absence of ball courts.

Many details are yet to be sifted and more information is needed on the prehistoric cultures lying between Middle America and Arizona before the history of ball courts can be written with any degree of completeness.



9. Model of the Winona court.

By Josip Korošec

• PROFESSOR KOROŠEC, Director of the Archaeological Seminary of the Faculty of Philosophy at the University of Ljubljana, has excavated various sites in Yugoslavia and has published numerous books and articles concerning the Neolithic period, the Early Bronze Age and Early Mediaeval Slavic archaeology. His work has included excavation, with Professor Vasić, at the important site of Vinča (1929-33), investigation of Neolithic lake-dwellings on the Ljubljana moor, and the excavation of the castle hill of Ptuj, the subject of this article. Professor Korošec is also head of the Archaeological Section of the Slovene Academy of Arts and Sciences at Ljubljana.

THE CASTLE HILL OF PTUJ

FROM PREHISTORIC TIMES TO THE MIDDLE AGES



1. The Castle of Ptuj on the hill overlooking the Drava River. Excavations were conducted near the small tower at the right.

THE CASTLE HILL of Ptuj, situated in northern Yugoslavia, is a high plateau overlooking the town of Ptuj (Petovio) and the Drava River (Figure 1). The site is very favorable for settlement, with water nearby, an excellent view and fertile soil below. For this reason it has been occupied, with some interruptions, for thousands of years. Before the first World War test excavations were carried on here, and in 1946 and 1947 the Slovenian Academy of Arts and Sciences resumed the work, in the course of which remains of various periods were discovered.

The oldest settlement dates from Neolithic times. Some remains of houses have been found (Figure 2) as well as pottery (Figure 3), but the amount of material is relatively small. Much of it had been mixed with finds dating from as late as the end of the Bronze Age. The Neolithic remains are related to, and even identical with, those of the Slavonic culture which spread over part of the Pannonian plain in the Danube basin, as well as in Yugoslavia between the Drava and the Sava Rivers.

The Bronze Age is represented at Ptuj by considerably more material. Although only two houses were found, many more hearths—twenty-three in all—were discovered. The houses are square, with upright beams resting on the ground but not dug into the earth. The hearths are quite simple, made of coarse fragments of pottery and small stones. Around the hearths were found large pyramidal objects which may have served as andirons, while fragments of movable hearth-drums are frequently found as well. The bronze finds are chiefly arrowheads and pieces of needles. Pottery is abundant—bowls with or without lugs, pots, tureens, amphorae, and other shapes (Figure 4). Many dishes, some quite large, are ornamented. The plastic decoration is particularly interesting; it includes such motives as garlands, wavy lines and small blobs. The tools are stone axes of no very definite type and stone hammers, rather crudely made. A very few tools of bone and horn have been found—awls and chisels only. Among the most interesting objects is a rather poorly preserved clay statuette representing a woman (Figure 5). It appears to date from the earliest phase of this period. Whereas this statuette represents a female deity, the phallus, as the symbol of the male deity, has also been found. The latter, however, must be assigned to the end of the Bronze Age. Up to now the Bronze Age necropolis has not been located and conse-

quently much information is to be awaited, both of the earlier and the later phase.

After this period there was a long gap in the occupation of the site. The earlier Iron Age has left no trace but remains of the La Tène period have been found. These consist mainly of graphite pottery. In the same level was found a Celtic coin of the kind used in southern Gaul at about the time of the birth of Christ. On it is a head of Julius Caesar in barbarous workmanship. Scant remains of a stone fortification wall, built without the use of mortar, may date from this period (according to Professor J. Klemenc). It is most likely that the town served at this time as a small fortress or *refugium*. The data are insufficient to support more concrete conclusions.

During the period of Roman domination the castle area as well as the entire plateau was occupied at various times. From the early Imperial period there are only slight remains such as coins, clasps and fragments of *terra sigillata* and of glass vessels. There are no traces of walls, so it is unlikely that buildings were erected on the site during this time.

From late Roman times we have a Christian basilica. Part of the foundations and a pavement that probably belonged to an apse are among the preserved portions. There are also some architectural fragments, such as part of the screen of the basilica—an oblong marble block with a relief decoration showing a male figure surrounded by vines. Dating from the same period as the basilica are some walls that encircled the plateau as well as a poorly preserved building. The walls around the plateau retained their function even after the basilica was destroyed. Characteristic of the period following this destruction are masonry piers that served as supports for wooden beams holding up roof structures. Sixteen such masonry piers are preserved in all. They are arranged in lines, some extending north to south, others east to west, and the way in which they lie shows that they belong to various buildings.

The latest building of the Roman period is a small fortress (Figure 6). This is a poorly made structure consisting of a square building surrounded by walls parallel with the building (Figure 7). There is a similar fortress on a nearby hill called Panorama, but here the building is enclosed within a triple wall and thus the whole complex is much larger. The fortress has been variously dated to the period of the East Goths, some time prior to A.D.

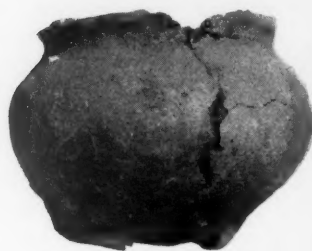
2. An Old Slavonic skeleton as it was found lying beside a hearth of the Neolithic period.



PTUJ *continued*



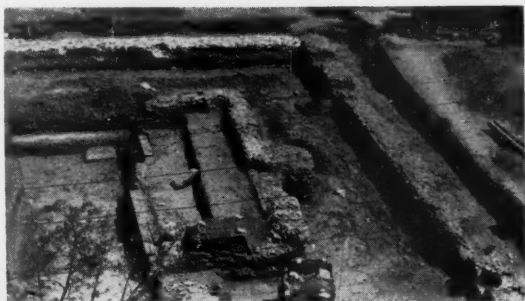
4. Vessels of the Bronze Age. Those shown here are mostly cooking pots. The stand with holes in the top is a brazier.



5. Clay figurine of the Bronze Age, representing a woman. This crudely modeled figure has a plastic nose with nostrils indicated, and round blobs for ears. The mouth is indicated by a hole; the fingers are marked by incision. This is the third figurine of its kind found in Slovenia.



3. Pottery of the Neolithic period, showing a wide variety of shapes.



6. Remains of the Roman fortress after excavation. The central building is enclosed by a wall.



7. Part of the outer wall of the Roman fortress. In the bank can be seen a gate which is not yet excavated.

PTUJ *continued*



8. A marble altar of the Roman period dedicated to the god Jupiter. On one side is the eagle which was his symbol; on the other the bolt of lightning which was his chosen weapon.



9. A mold for casting metal vessels, shown as it was found in the earth.



546, and to an earlier period. Those who believe in the earlier date concede that the fortress was probably used also by the barbarians. The earlier structures, especially the basilica, have been dated to the time of Bishop Ambrosius and are thought to have been destroyed by the Huns in 452. The masonry piers are believed to have been constructed during the temporary settlement which existed after 452.

In addition to the architectural remains found *in situ*, there are a good many architectural fragments such as marble columns, a marble capital, the basilica screen fragment mentioned above, fragments of carved marble pillars and building bricks bearing makers' stamps. Inde-

pendent pieces include a marble altar dedicated to Jupiter (Figure 8), the base of an altar table from the basilica, the statue of a wild boar and other pieces. Small finds were numerous: coins dating from Domitian to Theodosius the Great, fragments of pottery and glass vessels, bracelets, decorated pins, clasps, spear heads and the point of a javelin. An interesting mold for casting bronze vessels was also found (Figure 9).

The next period at Ptuj is that of the Slavs, who came in the early Middle Ages. At one side of the Roman fortress, which had by then been destroyed, they constructed a building which has been identified as a sanctuary (Figure 10). This building was square in shape, with a



10. The area of excavation after work was finished. Under the shed in the center of the Roman fortress (at left) are the remains of a Slav sanctuary.



11. Earrings and a brooch of the Slavic period. Hundreds of such pieces were found in the extensive cemetery.

sunken pavement (about two meters deep) around a central raised portion. The upper part of the building was made of wood. Very few Slavic sanctuaries are known, and if the identification is correct the building is of great importance.

During the tenth and eleventh centuries the Slavs had an extensive burial ground at Ptuj. Up to now no less than 373 graves have been excavated, and a great number had previously been destroyed. Two cultural groups are represented, the Kottlach and the Belobrdo; graves of the latter are more common. Some of the skeletons were found lying on planks; sometimes they were also covered with planks, but coffins are rare. The deceased wore all sorts of jewelry and ornaments, and an enormous amount of such objects has been found. The earrings (Figure 11) are often crescent-shaped, and many have beautiful

enamel decoration. There are also many S-shaped rings which appear to have been worn on the head, at the temples, suspended on ribbons. The necklaces are of various types: some are of braided metal, others of glass beads, and still others of small pendants strung on a chain. Many kinds of finger rings were also found. The men had weapons in their graves, as well as belt buckles and spurs.

Two hearths found in the cemetery area indicate that some sort of ritual was carried out in connection with the dead. A good deal of pottery was found near these hearths, and one may assume funeral feasts and the offering of food to the dead.

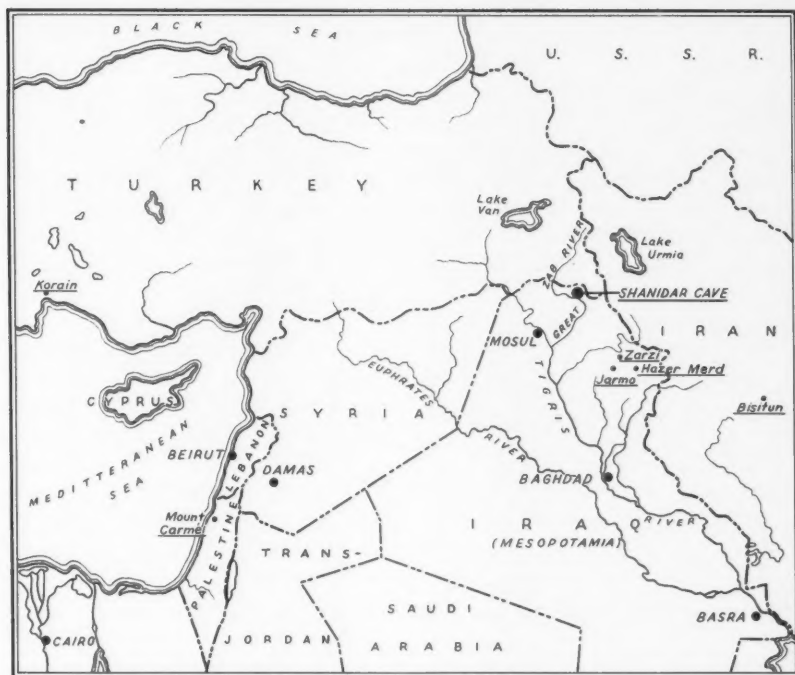
After this period the site continued to be occupied, but these later remains fall outside the period of archaeological interest.

Highlights of

the Winter issue of

ARCHAEOLOGY

- THE GOLD TREASURE OF PANAGURISHTE
by Dimiter Tsonchev
- THE NECROPOLIS OF BETH SHE'ARIM
by N. Avigad
- HELLENISTIC GOLD JEWELRY IN CHICAGO
by Carl H. Kraeling
- THE ISLAND OF CHIOS: RECENT DISCOVERIES
by John Boardman
- THE ZIGGURAT OF CHOHA ZANBIL
by R. Ghirshman



Map showing the location of Shanidar Cave.

THE SHANIDAR CHILD

A PALAEOLITHIC FIND IN IRAQ

By RALPH SOLECKI

• On leave of absence from the Smithsonian Institution in 1951, the author began the Shanidar Cave sounding on behalf of the Directorate General of Antiquities of Iraq while he was associated with the University of Michigan's 1951 Expedition to the Near East. Returning to Iraq again as a Fulbright Research Scholar and collaborator of the Smithsonian Institution, he completed the sounding in 1953. That season's work was a joint undertaking of the Smithsonian Institution and the Iraq Directorate of Antiquities. The writer wishes to express his sincere gratitude to the Directorate General of Antiquities of Iraq, not only for financial support but for invaluable assistance in furnishing personnel, equipment and facilities during both seasons' work. This article is published by permission of the Secretary of the Smithsonian Institution.

DURING the second season of archaeological work on a sounding in Shanidar Cave in Kurdistan, Iraq, the skeleton of an infant was found in the Palaeolithic deposits (see *ARCHAEOLOGY* 7 [1954] 21). The discovery of the child, although not so important a find for physical anthropologists as an adult's remains would be, nevertheless marks Shanidar Cave as the fourth principal Neanderthaloid find spot in the continent of Asia. It is the first Palaeolithic skeleton to be recovered in Iraq.

Shanidar Cave, one of a large number of caves in the limestone belt of the Zagros Mountains, was selected after several weeks of reconnaissance. It lies some 250 airline

V
8
/
3

S
E

5
5

UMI

miles north of Baghdad, and is within view of the Greater Zab River, one of the major tributaries of the Tigris River. The secluded mountain valley of Shanidar lies to the north of the Fertile Crescent and the University of Chicago's Oriental Institute excavations at Jarmo in the Kurdish foothills (see *ARCHAEOLOGY* 5 [1952] 157-164). Dr. Dorothy Garrod's excavations at Zarzi and Hazer Merd caves twenty-six years ago were made but a short distance to the east of Jarmo. Her excavations, described in a slim but very significant publication of the American School of Prehistoric Research (*Bulletin* No. 6), have great bearing upon the work at Shanidar, since Layer B of Shanidar is quite similar in artifactual content to Zarzi, and Layer D of Shanidar is similar in assemblage to Hazer Merd.

Lying at an altitude of well over 2,000 feet, Shanidar Cave has a fine southern exposure and is sheltered from winter winds. It is readily accessible from the river valley. This cave has the distinction of being probably among the longest continuously occupied caves in the Near East, certainly in Iraq. Even today several families of Shirwani Kurdish goatherds maintain winter domiciles inside the spacious cave, giving the place an air of communal living. The animal corrals, hitching rails and posts, and pens for cattle and livestock complete the cave settlement. The tribesmen's homes are simple, single-roomed shelters made of interwoven branches, limbs and straw supported by posts. These shelters are arranged close to the wall of the cave interior. A well worn path leads to a spring a few minutes up the mountain gorge. Before the coming of the hot summer months, the Shirwani goatherds carry bag and baggage around the mountain to the next valley, a cooler one, on the east.

Not only is Shanidar Cave distinguished by its contemporary if only seasonal occupants, but it also lies on an important seasonal migration route of another tribe of Kurds, the Herki. These Kurds, a large and powerful tribe, each year leave their winter homeland around Mosul and Aqra for their summer pastures in Iran. The Herki cross the Greater Zab River two or three miles from Shanidar Cave by means of an interwoven branch and limb bridge which they throw across the river at a narrow point. For a period of four or five days there is great tumult and excitement as they move across.

As to the archaeology of Shanidar Cave, there are four major stratigraphical layers, labeled A, B, C and D from the top downward. These form an archaeological sequence so far unique in Iraq. Layer A, the topmost, appears to represent a cultural backwater with occupational

debris extending from modern through dynastic Mesopotamian times to somewhere in the Neolithic horizon. An observer is struck by the number of extensive thick lenses of ashes and charcoal representing fire beds and organic deposits, all tightly compressed in the classic "layer cake" stratigraphy. This is in marked contrast to the less dense prehistoric layers beneath, leading one to consider the great change in the way of life brought about by the introduction of a new and rather more dependable food supply. Rotary querns in the upper part of the deposits and metate-querns, boulder mortars and hand millstones in the lower part of Layer A attest the pursuit of a sedentary life with some dependence on the products of the fields. Unfortunately, with the exception of some burnished Uruk sherds, the pottery is almost uniformly a drab and uninteresting collection of cooking pot fragments, hard to place in the known archaeological sequences of Iraq.

Layer B, distinguished from Layer A by the absence of pottery and broad layers of charcoal and ashes, contains flints which reflect a very careful and expert stone industry. It is characterized by numerous backed blades and microliths of various types, including a few trapezoidal flints. The material from this layer resembles Dr. Garrod's Zarzi finds, and also has points of similarity with the Palegawra Cave finds made by Dr. Bruce Howe of the University of Chicago expedition. On the basis of this analogy, Shanidar B should be included with Zarzi and Palegawra in the "terminal era of the food-gathering stage" of economy (see Robert J. and Linda Braidwood, "The Earliest Village Communities of Southwestern Asia" in *Journal of World History*, I [1953] 281). Dr. Hans Suess of the United States Geological Survey made a Carbon 14 analysis of a sample of carbon from the lower part of Layer B and obtained a date of $12,000 \pm 400$ years ago.

Just as Layer B was intruded into by Layer A, it in turn intruded into Layer C, which contained the newly identified "Baradost" prehistoric culture, named after the mountain which looms above Shanidar Cave. The Baradost horizon fills more of the gap between the Upper Palaeolithic Gravettian Zarzi layer and the Middle Palaeolithic Mousterian Hazer Merd layer. On two samples of material from hearths in Layer C, one in the upper part and one in the lower part, Dr. Suess obtained a radiocarbon dating of $29,500 \pm 1,500$ years ago and "older than 34,000 years" respectively.

The Baradost culture is characterized by a high proportion of well made burins or graters and a relative

View of Shanidar Valley from the approach to the cave. The Greater Zab River is at the right; the Baradost Mountain rises to the left. The lower terraces of this valley will be covered by water when the Bekhme dam is completed.

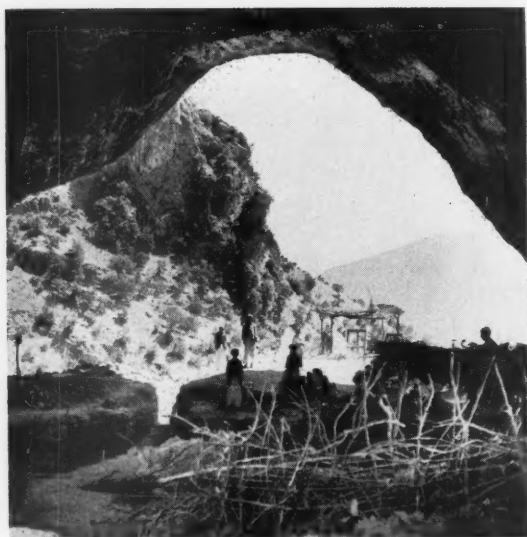


THE SHANIDAR CHILD continued

The Shanidar Cave with its long talus slope of debris.



THE SHANIDAR CHILD continued



Above: The Shanidar Cave interior, viewed from back of the sounding. Like a big picture window, the cave commands an impressive view. One of the Kurdish winter homes is at the right, background.

Right: Layers A, B, and part of C of the cave sounding. The rod is seven feet long.



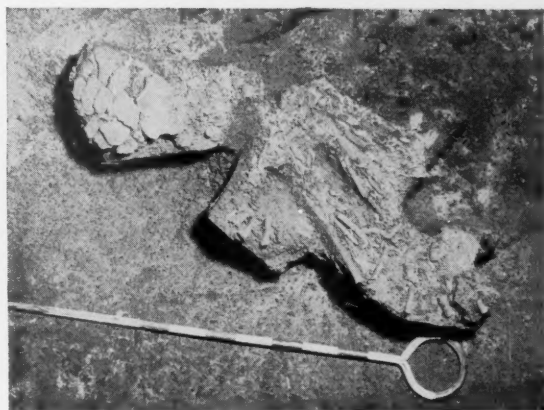
abundance of notched blades and flakes. Obsidian, whose nearest source is in the Lake Van region of Turkey, occurs in limited quantity. There is an absence of blunt-backed knives and points such as had been recovered in the Zarzi layer. At best, the Baradost culture, measured in terms of Near Eastern prehistoric stone industries, is relatively poor. It was evident that during this occupation period at Shanidar the cave dwellers must have suffered occasional fear for their lives because of earthquakes, to judge from the number of limestone blocks scattered through this layer. In fact, the inhabitants must have been living under the sword of Damocles, for in the excavation there was revealed more than one case where a boulder, undoubtedly dislodged from the ceiling, had smashed down upon a fire hearth, contorting it out of shape by the impact of the fall. Some crushed and broken fragments of an animal skeleton under one of these boulders indicated that at least one living mammal had been caught under a fallen rock. Indeed, this region is still an active earthquake zone, and earth tremors are felt from time to time. The expedition experienced a slight earthquake at the end of the season, but fortunately the walls held and no damage was done.

Layer D, by far the thickest layer (twenty-eight feet) in the sequence at Shanidar, yielded a stone industry very much like the Mousterian Hazer Merd cave industry discovered by Dr. Garrod. This deposit extended down to bedrock. The artifactual material is also similar to the finds made by Dr. Carleton Coon at Bisitun Cave in Iran, and there is some resemblance to the Mousterian flints found by Dr. Killic Kökten of the University of Ankara in Korain Cave near Antalya. There was noted an especially heavy concentration of occupational debris

from a depth of about twenty-four feet to about thirty-two feet below the surface. A thin seal of stalagmite extended over the entire floor at a depth of about twenty-seven feet, which may point to an especially wet, or pluvial, period in the occupational prehistory of Shanidar Cave.

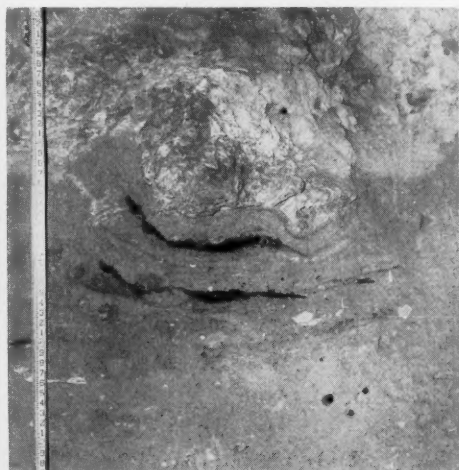
The Shanidar child, which was uncovered at a depth of twenty-six feet, was found at a level wherein four projectile points of a distinctive type were discovered. This type somewhat resembles the Emireh type of projectile point which Dr. Garrod recovered at the base of the Upper Palaeolithic at Mount Carmel near Haifa, now in the state of Israel. In a communication Dr. Garrod says that she does "not consider that this artifact has any necessary connection with the Emireh point, from which it differs in certain important respects." According to Dr. Garrod, the Emireh projectile point appears to represent a transitional industry between the Middle and Upper Palaeolithic, or in other terms, between the Mousterian and Aurignacian-type stone industries. Although the Shanidar "Emireh" points were found some nine feet below the contact zone between the Upper Palaeolithic and Middle Palaeolithic deposits (Layers C and D), the possible relationship between the Shanidar point and the Emireh point is intriguing. Until all data have been worked out and the material has been systematically checked and studied, the tenuous possibility that the Shanidar baby may represent a transitional being between the accepted *Homo Sapiens* of the Upper Palaeolithic and the equally accepted Neanderthaloid of the Middle Palaeolithic is not without its fascination.

The Shanidar baby (which was almost baptized the "Baradost baby") was discovered under circumstances



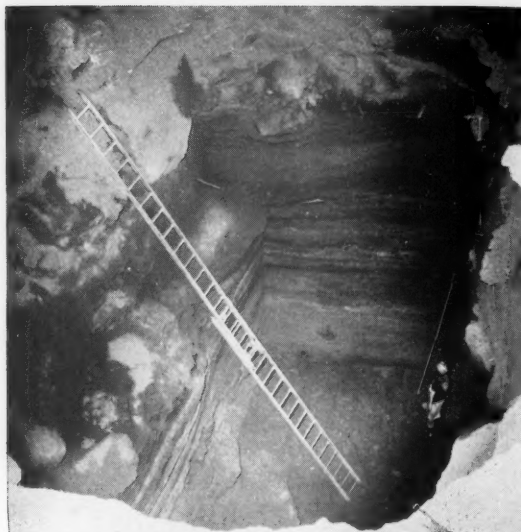
Top: Workmen screening the dirt from the sounding at the cave mouth.

Above: The Shanidar baby as it was found. This is the same picture as that in *ARCHAEOLOGY* 7 (1954) 21.



Left: Two hearths of Layer C which were contorted out of shape by the impact of a large limestone boulder which was dislodged from the ceiling of the cave.

THE SHANIDAR CHILD continued



1

1. Bedrock, upon which the worker is standing, was reached finally at a depth of forty-four feet in the Shanidar Cave sounding. The top of the ladder rests against a "stepback" in the shaft. The layered deposits seen in this view are Mousterian.
2. Backed blades, a trapezoidal form and a notched blade from the Zarzi layer, Layer B of Shanidar Cave.
3. Examples of stone artifacts from the Baradost layer, Layer C, including from left to right (upper) a scraper, a notched blade and a point; (lower) front and side views of two gravers which have peculiar working facets on the graver edge.
4. Examples of artifacts from the Mousterian deposits, Layer D. From left to right are shown a long side scraper, a curved point and a typical Mousterian-type point. The small artifact below is representative of the Shanidar "Emireh" point. It is retouched at the base on the reverse side as shown.

2

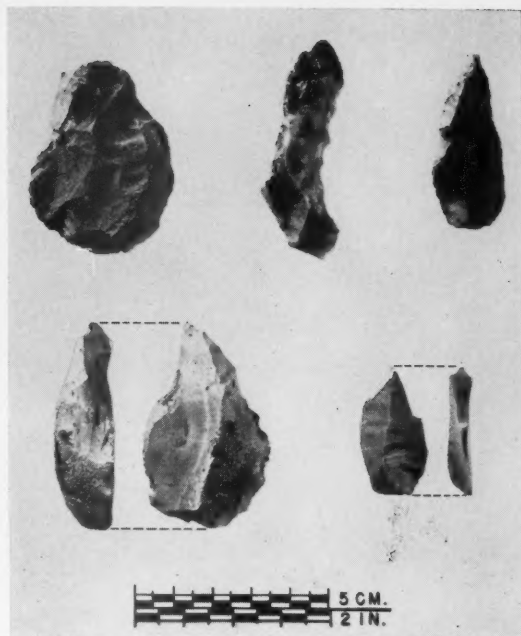


which absolutely rule out any argument for intrusion. The skeleton, very poorly preserved and in a fragmentary condition, was not accompanied by any funerary material. It lay in a flexed position on its right side, with its arms and legs drawn up to its body. Unfortunately the skull, in thirty-one fragments, was badly crushed and the face was gone. Sixteen milk teeth were recovered. These were examined by Dr. D. F. Veldkamp, Professor of Dentistry at the Royal College of Dentistry in Baghdad, who thought they belonged to a baby about nine months old.

These finds were corroborated by Dr. Garrod during her visit to the Near East in the winter of 1953. In the opinion of Dr. Garrod the sequence found in Shanidar Cave bears no real resemblance to the Palestinian sequence as it occurred at Mount Carmel and other sites in Palestine. She believes that the Shanidar Cave sequence belongs to another culture area.

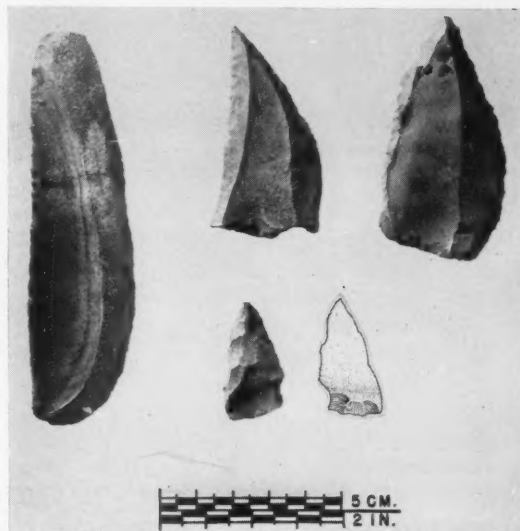
The physiography of the Shanidar Valley will be changed within five years when the projected Bekhme power and conservation dam about eight miles below Shanidar is completed. The river terraces and any open archaeological sites in the valley will be inundated. Fortunately the cave, of which only about one twenty-fifth has been explored, will not be affected. However, the flooding of the valley will present a problem of access, since the present road will be under water.

These are the facts, and they look very dry indeed. There are no striking antiquities of any kind from Shanidar for the beholder to view—even the pottery from Layer A is miserable. What exactly makes this site unique? In the first place, we have within a few square yards at Shanidar the longest chronological sequence in Iraq, spanning a time interval from the Middle Palaeolithic right up to the present Kurdish dwellers. Since prehistoric man did not live in a vacuum, there are things which we must relate to his living, such as climate, physiography, flora and fauna—the ecological conditions of his time. Correlating the several related disciplines with the evidence, it is expected that the archaeological sequence at Shanidar will chronicle some of the events in the life of man in this part of Asia.



3

4



THE ORIENTAL COLLECTIONS



By Jack Sewell

Assistant Curator of Oriental Art

BRONZE FANG I. Chinese, Early Western Chou Dynasty, eleventh to eighth century B.C. This striking wine vessel is a handsome example of the solid, almost "architectural" type of bronze. Lid and body are each divided into two bands of decoration, with a high expanding base bearing a fifth band. This decoration, composed of stylized birds, dragons and T'ao T'ieh masks, is crisply delineated against a ground of incised thunder pattern. There are ornamental flanges at each corner and midway on the four sides. An inscription on the lid, repeated on the body below, reads: "Yung Tzu made (this) precious sacrificial vessel." Height 12 $\frac{7}{8}$ inches. Lucy Maud Buckingham Collection.

TAI-KEU. Chinese, second half of Eastern Chou Dynasty, fifth to third century B.C. This unique garment hook is of jade, and bronze inlaid with gold and silver. The highly stylized white jade dragon is decorated with evenly cut scroll-like scale markings and coiled into a somewhat oval position. Surrounding it is the hydra-like bronze form terminating in a bull's head with long curling horns. The entire bronze body is inlaid in a geometric and scale pattern, alternating gold and silver. Height 3 $\frac{1}{4}$ inches. Lucy Maud Buckingham Collection.



OF THE ART INSTITUTE OF CHICAGO

• JACK SEWELL, who joined the staff of the Art Institute in March, 1954, is a native of St. Joseph, Missouri. In 1950, after a tour of army duty in the South Pacific and Japan, he received an M.A. in Humanities at the University of Chicago. He has studied Chinese at Harvard-Yenching Institute, and has completed the academic requirements for his Ph.D. at Harvard, specializing in the art of India, China and Japan.



BRONZE STAG. Chinese, third century B.C. (?). The exact use of this fitting is unknown. The little animal is realistically portrayed with indications of the hair at the throat and about the head. Minute incised striations form the spots on sides and flanks. The cup-like socket is borne on the back and given added support by the antlers which embrace it on either side. This opening pierces the solid body of the stag but does not go to the bottom. Height 3 5/16 inches. Lucy Maud Buckingham Collection.

THE ART INSTITUTE OF CHICAGO is primarily an art museum. Works of art chosen or accepted for the collections must be the finest possible examples of their type, and the final basis of judgment is always artistic quality. For this reason the presence of objects of archaeological interest within our walls is coincidental. It is of course no revelation to art historians or archaeologists that occasionally a piece of extraordinary archaeological interest will also be artistically important. Numerous pieces of this type have through the years found their way into the Oriental collections.

It is probably among the exceptionally fine Chinese bronzes that this "overlapping of fields" is most evident. When Kate Sturgis Buckingham began collecting Chinese bronzes it was with no intention of forming a

comprehensive collection. Her aim was to honor the memory of her sister, Lucy Maud Buckingham, with objects of above average quality and of definite aesthetic appeal. Her standards were high and exacting and the impressive bronzes form one of the best collections in the field. Other bronzes of merit have been added from time to time by purchase. Covering the Shang (1766-1122 B.C.) through the Han (206 B.C.—A.D. 220) Dynasties, they range from a large Fang I (wine vessel) of impressive solidity and solemn grandeur to the delicate traceries of silver and gold in a Late Chou garment hook. The former is actually "architectural" in the solemn splendor of its form and the serrated, but solid, "buttressing" flanges. The garment hook, on the other hand, has a light rhythmic play of line in the gold and silver



BRONZE LEI. Chinese, Shang Dynasty, eighteenth to twelfth century B.C. This unusual type of lei is said to have been excavated at Anyang, capital of the Shang-Yin Dynasty, and its style conforms with other objects found at that site. Vessels of this form are thought to have been used for the storage of liquids. Inside, under the crown of the lid, is a cicada cast in high relief, but there is no inscription. One of the finest features of this lei is its particularly handsome color, with a prevailing tone of cool gray. There are light deposits of azurite and malachite, and traces of inlay in the incised design of the knob on the lid. Height $17\frac{3}{4}$ inches. Buckingham Fund.



BRONZE MIRROR WITH GOLD REPOUSSE. Chinese, T'ang Dynasty, A.D. 618-906. This little mirror is heavily corroded, but the gilt backing is in an almost perfect state of preservation. The outer border is made up of foliate and vine motifs interspersed with animals and, on two opposite sides, with pairs of seated figures. Neither beasts nor humans are repeat designs, but represent a continuous and rather free procession of forms. The larger central field is divided into four equilateral triangles by panels of flowers and foliage. The triangles contain phoenixes (in opposite spaces) and mythical four-footed beasts, which again are not repeat designs. $3\frac{3}{4}$ inches square. Gift of Mr. and Mrs. Potter Palmer.

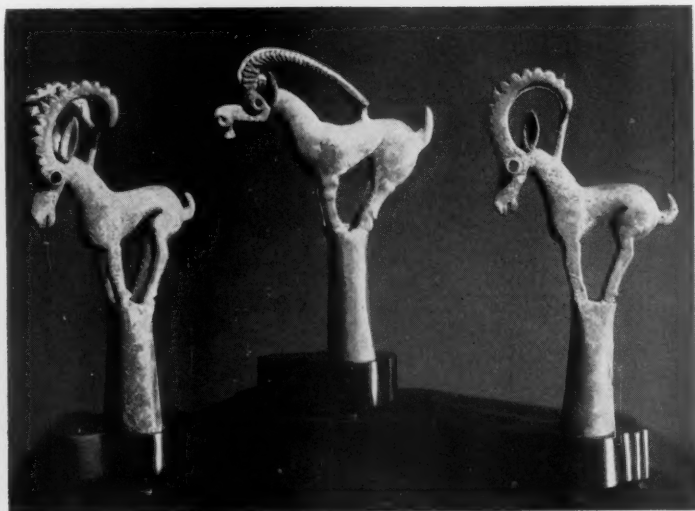
BRONZE ORNAMENTS. Chinese, Ordos Region, fourth to third century B.C. These ornaments are thought to have been used as harness jingles. The figure of a swan with a cygnet on its back is modeled in the round. The feathers of each bird are broadly indicated by diagonal openings and each swan is fitted with a movable ball of bronze, probably a jingle. Four squared openings in the base for fastening. Green patina with heavy patches of light green. Height $7\frac{3}{8}$ inches. Lucy Maud-Buckingham Collection.



CHICAGO *continued*



BRONZE MASK. Chinese, Eastern Chou Dynasty or earlier, eighth to third century B.C. This mask, like others in the collection, is made of a thin sheet of bronze of uniform thickness. Pierced and molded in relief, they were evidently attached as decoration, perhaps to a garment or possibly a chariot. In addition to the eyes, nostrils and mouth, there are two decorative perforations on the nose and incised designs on the surface. The patina ranges from bright green to reddish gray. Height 10½ inches. Lucy Maud Buckingham Collection.



BRONZE ORNAMENTS. Chinese, Ordos Region, fourth to third century B.C. Like the swans, these tubular forms surmounted by antelope and Marco Polo sheep are said to have been used as harness jingles. The alert and spirited animals are modeled in the round and the eyes are pierced entirely through the head. Two round openings near the foot of the base were probably for fastening. Height 6 15/16 inches. Lucy Maud Buckingham Collection.

WOODEN CEREMONIAL ORNAMENT. Chinese, Late Chou Dynasty, fifth to third century B.C. Although each half of this double-monster ornament, perhaps a finial, is identical in conception, individual elements differ in size and proportion. The very free painted decoration is weathered to gray and buff tones, with touches of red. Although corresponding elements of the painted decoration are similar, there are minor variations. In some portions the decoration would seem to indicate the scale-like texture of the mythical animal portrayed, while other elements are purely geometric and decorative. The base is a modern restoration. Height 19 inches. S. M. Nickerson Fund.



POTTERY CEREMONIAL VESSEL. Chinese, Late Eastern Chou Dynasty, fifth to third century B.C. The shape and form of this strikingly handsome example of early Chinese pottery are unique. The original use of the piece is conjectural but it may have been an incense burner. The vessel is of deep buff clay and the upper rim is banded in gilt bronze. On the lid are three



recumbent animals, perhaps rams. The decoration consists of incised lines irregularly drawn in a diamond pattern on the body, and a spray or tree form on the rim. The lid bears a slightly more elaborate spray and a geometric pattern. The rim is slotted and has perforations in two places, perhaps for a rope handle. Diameter at rim 10 inches. Gift of Russell Tyson.



inlay surrounding the convolutions of the white jade dragon. Unique is a handsome stag dating from the third century B.C. While these bronze vessels and accessories form the major part of the Buckingham collection of bronzes, a small group of plaques and fittings from the Ordos region is also notable.

A recent accession is a handsome bronze mirror backed with gold repoussé, the gift of Mr. and Mrs. Potter Palmer, who for many years have been active and discriminating collectors of Oriental art. The delicate filigree is composed of an outer band of floral decoration and an inner field divided into four equilateral triangles, each containing a phoenix or a mythical beast.

One of the early donors to the Art Institute was S. M. Nickerson. Through his generosity the museum has been able to add to the collection in his name. In this manner two early Chinese works of high artistic merit and real archaeological interest have been added in recent years. One, a wooden finial of the Late Chou period, represents double monster heads, placed back to back. Though contemporary with the graceful attenuated birds and snakes of the Wade Collection in the Cleveland Museum of Art (ARCHAEOLOGY 6 [1953] 200) this sculpture depends largely on the solidity of the exotic subject for its awesome interest. There is nonetheless an alert, springing quality to the lines of the piece. A pottery replica of a bronze mirror (not shown) is a handsome example of these facsimiles which were substituted for bronze objects to be buried with the dead.

The Han pottery collection, like the bronzes, owes its origin largely to the judicious selections made by Miss Buckingham. In addition to the vessels and animals, the collection contains several interesting models of build-

ings and tomb furniture.

An extremely fine Late Eastern Chou vessel, perhaps designed as an incense burner, is from the collection of Russell Tyson, who has for many years collected fine porcelains chiefly from the later, more sophisticated periods of Chinese art. These porcelains, along with rugs and textiles, form the major portion of his collection.

The large and remarkable collection of archaic jades assembled by Mr. and Mrs. Edward Sonnenschein came, upon their death, to the Art Institute. Unlike most collectors, the Sonnenscheins bought many objects of admittedly inferior artistic quality for study purposes. Included were even *ersatz* examples of the precious mineral, which with their other study material enabled them to understand more thoroughly the vast field which they had chosen. Though many of the forged and study objects are not now in the collection, it remains a unique opportunity for the student. Notable are a masterfully executed Pi and a large reclining water buffalo. A unique specimen is the kneeling and bound prisoner of Late Eastern Chou date, presumed to have been a funerary statue.

The small but choice collection of Cambodian sculpture was made by a French official in the 1870's, long before export of this art was prohibited by the government. One of the best examples of Gandharan sculpture in western collections is the steatite fragment illustrated here. It is a work of excellent quality from the period when the sculpture of Northwest India, though predominantly Indian in subject matter, was subjected to successive waves of influence from the eastern centers of the Roman Empire.

PI (RING-DISK) [left]. Chinese, Late Eastern Chou Dynasty, fifth to third century B.C. This symbolic disk is of white jade with lighter markings, rust spots and traces of vermillion. The edges are framed by plain concave bands. On both sides the surface is divided into two bands of relief decoration. The broad inner relief band has ten concentric circles of modeled and interlocked spirals. The outer band combines intertwined angular bands with nine bird-head silhouettes rising from the inner edge and nine tiger faces descending from the outer rim. Diameter 8 inches. Collection of Edward and Louise B. Sonnenschein.

CHICAGO *continued*



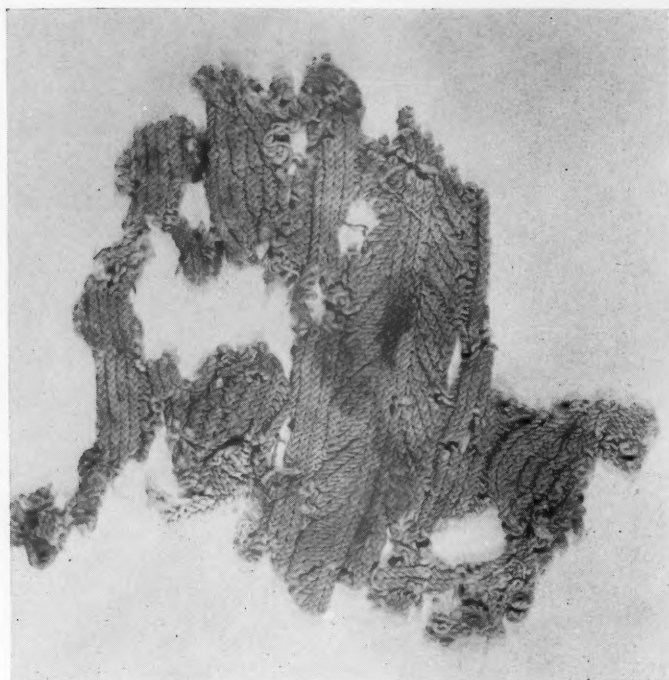
FUNERARY STATUETTE. Chinese, Late Eastern Chou Dynasty, fifth to third century B.C. This figure of a bound and kneeling prisoner is of a soft black stone. The man wears a cap with deep, striated center groove. A pigtail of double braids is incised on his back. Facial features are only summarily indicated. The over-size ears are perforated. Height $7\frac{3}{4}$ inches. Collection of Edward and Louise B. Sonnenschein.

JADE WATER BUFFALO. Chinese, Sung Dynasty, A.D. 960-1279. This alert and watchful animal is modeled in the round from dark green jade. Though the striation of tail and horns is highly stylized, there is great feeling for the bulk and volume of this massive beast. Length $15\frac{1}{2}$ inches. Collection of Edward and Louise B. Sonnenschein.





STONE PEDESTAL. Gandhara, India, second or third century A.D. This steatite fragment is one of the finest examples of this phase of Indian sculpture. The scene represented is the "Birth and Seven Steps of the Buddha." He is shown emerging from the right side of Maya, who is supported by an attendant, while her right hand grasps a branch of the Sal tree. Below, the divine child takes the "Seven Steps." Height $12\frac{3}{4}$ inches. S. M. Nickerson Fund.



1. Fragment of knitted wool fabric. Dura Europos, Syria, ca. A.D. 250. This is one of the three pieces of knitting found on the site; it measures about 10 x 10 inches. Yale University Art Gallery.

THE ORIGINS OF THE ART OF KNITTING

By Milton N. Grass

• The author is a graduate of the Wharton School of Finance of the University of Pennsylvania, and has been engaged in various phases of the textile industry for forty years. He has contributed articles to trade publications, and combines a lifelong interest in writing with an intimate knowledge of the hosiery industry. His book *From Fig-Leaves to Nylons, A History of Hosiery* is scheduled for fall publication by Fairchild Publications, Inc., who have granted permission to adapt the material for this article from one of the chapters.

THE TEXTILE ART was the creation of Neolithic man. Centuries without count were to elapse between the development of the idea of spinning yarn and that of weaving it into a fabric. Paintings and carvings such as have been found in Egyptian tombs built at least five thousand years ago, as well as the statement of Pliny the Elder in his *Historia Naturalis* that he "considered the Egyptians to be the inventors of the art of weaving," testify to the antiquity of Egyptian textile creativity.

In the Bible all references to fabrics are to weaving, not to knitting. The Old Testament tells us that "Pharaoh arrayed Joseph in vestures of fine linen," and that the ancient Hebrews "executed all manner of work of the designing weaver" during the period of their sojourn in Egypt. Biblical scholars put the date of Joseph's rise to power at about 1600 B.C.

Hand-knitting differs completely from hand-weaving. Hand-knitting is "the art of interlacing a continuous single thread, by the use of a pair of needles, into a series of connected loops, which make a fabric." Hand-weaving is "the art of interlacing at right angles two or more thread-like elements, friction holding these elements together into one compact entity." The basic difference between the two arts is the use of a continuous single thread in knitting as contrasted with the use of many threads in weaving.

The earliest extant examples of knitting are three small fragments of fabric which were found on the site of the ruins of an ancient Syrian city called Dura Europos. These, discovered by an expedition conducted under the auspices of Yale University and the French Academy of Inscriptions and Letters, prove conclusively that the art of hand-knitting was known and practised in the Near East at least as early as the middle of the third century A.D. How long the art was practised before that time is still unknown.

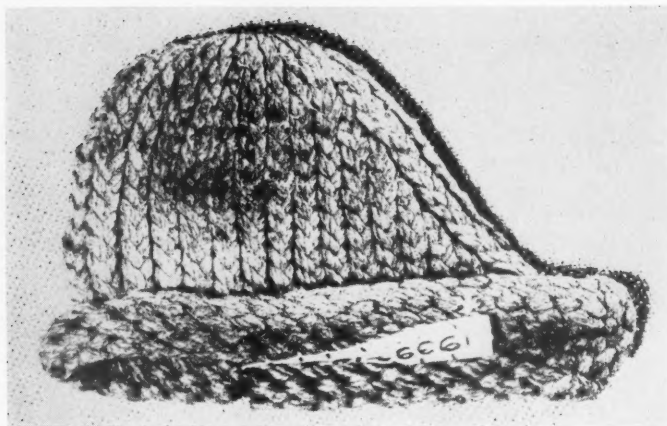
Dura Europos was founded in 280 B.C. as a fortress and military center by Macedonian soldiers who had conquered and ruled Syria under Alexander the Great. Because of its strategic location on the banks of the River Euphrates it was conquered by the Parthians, then by

the Romans, and in A.D. 256 the Persians attacked, pillaged and thoroughly destroyed it. Before the last attack the defending soldiers, as well as the inhabitants, fled precipitately. In a final attempt to save their lives they abandoned all their *lares et penates*. The Persians paid no attention to seemingly unimportant pieces of clothing lying on the ground, being intent on the slaughter of all the inhabitants and the loot of gold and jewels. The desert soon buried the site of what had been Dura Europos. The ruins of every building and everything on the ground, including clothing and knitted articles, were covered by drifting sand. The dry climate and the sands protected remnants of these pieces of woven cloth and knitted fabric as perfectly as if they had been sealed in an air-tight vacuum container.

The three pieces of knitted fabric found on the site, one of which is shown in Figure 1, are in the possession of Yale University Art Gallery, at New Haven, Connecticut. It has not been established whether they were pieces of underwear, hosiery or other wearing apparel, but that they were made of wool fibers and are true knitted fabrics there can be no doubt. All were worked in the so-called "crossed Eastern stitch." Two of the three fragments are small pieces of ribbing, with colored bands running through the middle of each. The large piece (Figure 1), made of an undyed yarn, is about 10 by 10 inches in size and has an elaborate pattern.

We do not know whether these pieces of fabric were knitted in Dura or imported. Caravans passing to and fro from the centers of both Eastern and Western cultures brought to its inhabitants the arts and crafts of many regions. Materials and goods from all peoples were to be found in the bazaars and marketplaces of Dura. What its inhabitants possessed and wore was not necessarily made in Dura itself. Therefore it is possible that the art of knitting was known and practised by other peoples and in other lands some time before the year in which this caravan city was destroyed.

Knowledge of the art of hand-knitting was not lost when the Persians destroyed Dura Europos, for we have factual evidence that it was practised in Egypt by the



2. Brown wool knitted doll's cap. Bahnasa (ancient Oxyrhynchus), Egypt, third-fifth century A.D. Length $2\frac{1}{2}$ inches, height $1\frac{1}{2}$ inches. Victoria and Albert Museum, London.

Copts. Five hand-knitted articles found in Egyptian tombs of the Coptic period are now in the possession of the Victoria and Albert Museum in London. One of these is a doll's cap (Figure 2) and the other four are socks of the anklet type. Except for one distinguishing feature, namely, that these socks are divided at the great toe (a characteristic of the present-day Japanese sock called *tabi*), they do not differ in appearance and workmanship from the anklet socks of commercial manufacture today.

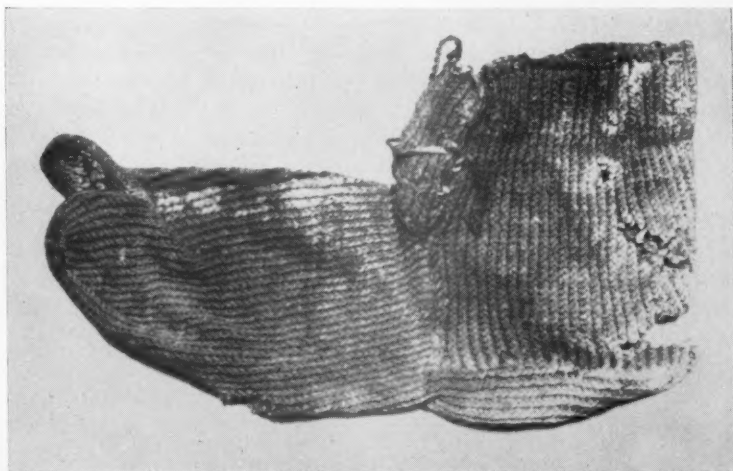
Sir W. M. Flinders Petrie, the Egyptologist and archaeologist, has assigned a general date, from the third to the sixth century A.D., as the period when these socks were knitted and worn. In *Hawara, Biabmu, and Arsinoe*

(London 1889) Petrie describes (page 12) a tomb where he found a wool sock:

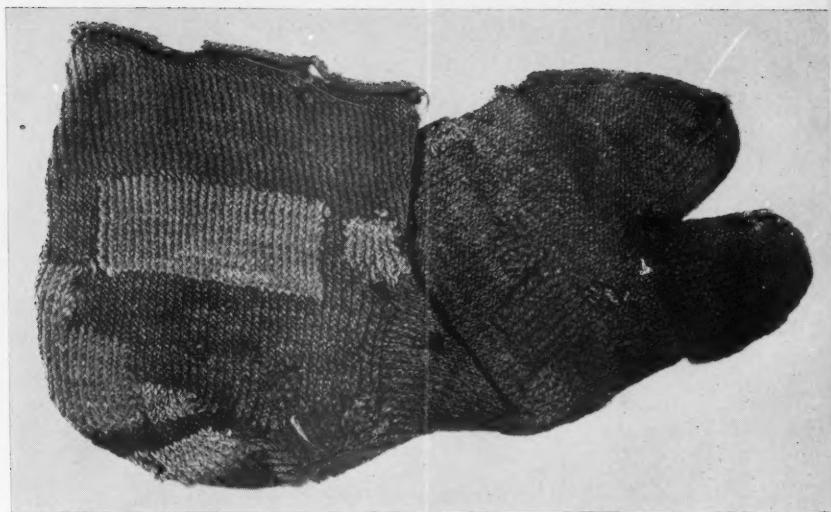
"In a tomb chamber, near the north end of the region [i.e., the cemetery at Hawara] were found . . . white thread embroidery on purple . . . and one of the socks of thick *knitted* brown wool. The age of this tomb may be probably of the fourth century."

In the course of excavations made at Bahnasa, Petrie found in one of the tombs another single sock, hand knit of wool yarn which had been dyed purple (Figure 3). This sock measures $8\frac{1}{2}$ inches in length. It was

3. Sock of purple knitted wool. Bahnasa, Egypt, fourth or fifth century A.D. The sock is divided at the great toe and laced at the front. Length $8\frac{1}{2}$ inches. Victoria and Albert Museum.



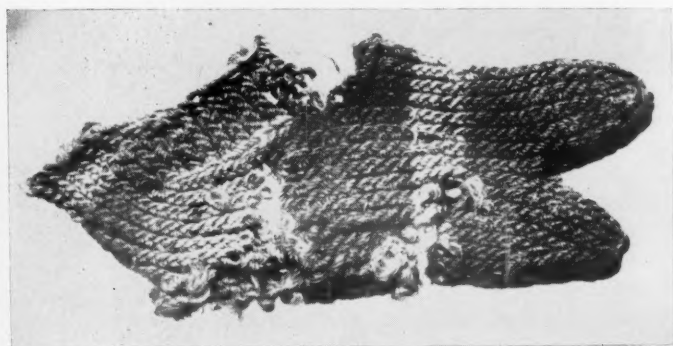
4. Brown wool knitted sock. Bahnasa, Egypt, fourth or fifth century A.D. Note that sock has been mended. Length 9 inches. Victoria and Albert Museum.



Petrie's opinion that this had been knitted and worn in the fourth or fifth century. In a later expedition to this same site, a knitted sock of wool, dyed brown and measuring about nine inches in length, was found (Figure 4), also to be ascribed to the fourth or fifth century. Interestingly enough, this sock had been darned.

In the ancient Egyptian town of Antinoe a child's knitted wool sock was found which has the appearance of a modern "blazer-stripe" anklet (Figure 5). It was knit with several courses of red-dyed yarn alternated with several of yellow-dyed. It is now on exhibition in the Museum of the City of Leicester, England. That the element of "fit" was considered essential, even in this

early period, is shown by a pair of wool socks from Egypt, hand-knit and in an almost perfect state of preservation, in the collection of the Victoria and Albert Museum, in London (Figure 6). This pair of socks, dyed red and measuring $9\frac{1}{2}$ inches in length, has a cord or draw-string at the top of the selvage, and has the divided great toe. The toe sections were knitted separately and then looped to the body. The photograph clearly shows that the Egyptians fashioned their socks to fit, as in the full-fashioned hosiery manufactured today, and that the "fashioning" of hosiery was practised a thousand years before the days of the Reverend William Lee, who invented the frame-work knitting machine in England in



5. Child's knitted wool sock, with stripes of red and yellow. Ancient Antinoe, Egypt, fourth or fifth century A.D. Museum of the City of Leicester, England.



6. Pair of socks of red knitted wool. Bahnasa, Egypt, fourth or fifth century A.D. Length $9\frac{1}{2}$ inches. Victoria and Albert Museum.

the year 1589. "Fashioning" was accomplished by a method of cross-knitting at the heel and at the bottom of the sole. This cross-knitting enabled the knitter to make a fitted heel-cup which gave better shape and form to the sock.

There are two hypotheses as to how the art of hand-knitting was introduced to Europe. When the Arabs conquered Egypt in A.D. 641, they found a flourishing textile industry carried on by the native Copts, who willingly continued their weaving and knitting for the new masters. Spreading out in their search for new lands, the Arabs gained control of the Iberian Peninsula in 711-712, and the Islamic art and culture of the Near East was brought to the natives of Spain. According to one hypothesis, the families of the Moslem troops and the traders who followed practised the art in their new homeland and taught it to the Spaniards. There is even a tradition in the Basque country, where hand-knit berets are commonly worn, that the Basques have possessed a knowledge of knitting for over a thousand years. The other hypothesis gives credit to the early Christian

Church. It is known that Coptic missionaries were sent on journeys to Spain and Italy, and it is argued that they, having practised the art of knitting in Egypt, might have brought this knowledge with them to Europe.

Some samples of Islamic hand-knitting which have survived the ravages of time are now in the possession of two museums in the United States. The Islamic collection of the Metropolitan Museum of Art in New York City includes one complete sock and part of another, ascribed to the twelfth or thirteenth century. The fact that these two specimens are knit of heavy cotton yarn may indicate that they are of Syrian rather than of Egyptian origin. The body of the complete sock measures twelve inches in length, and the foot measures nine (Figure 7). A distinguishing feature is five horizontal bands of striping, knit of indigo blue yarn; each band being from $1\frac{3}{4}$ inches to 2 inches in width. In the middle of each band is a design of stylized Arabic letters in white and blue. The form of these Arabic letters is the basis for the dating. Although the letters are somewhat imperfect, owing to the techniques of knitting used, they can readily be



7. Cotton knit sock with blue stripes and blue and white stylized design of Arabic letters. Origin unknown, but probably Syrian Islamic, twelfth or thirteenth century. Length of boot 12 inches; of foot 9 inches. Photograph courtesy of Metropolitan Museum of Art, New York.

identified as Arabic script of that period. The foot of the other, incomplete specimen (Figure 8) has the same general characteristics. The length of the foot measures $8\frac{1}{2}$ inches and what is left of the boot $2\frac{1}{2}$ inches. The foot also has bands of blue and white with a design of stylized Arabic letters. In the Detroit Institute of Arts there is a fragment of Egypto-Islamic knitting which is attributed to the period from the tenth to the fifteenth century (Figure 9). Believed to be the upper part of a sock, it likewise has a design of blue thread, here worked to form a geometric pattern.

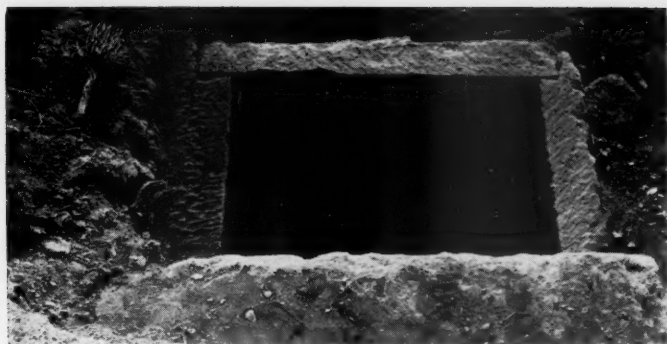
The Islamic hand-knitting in the Metropolitan and Detroit Museums, the Coptic hand-knit socks in the Victoria and Albert and the Leicester Museums and the three pieces of knit fabric at Yale University Art Gallery are links in a chain which we can trace as far back as the year A.D. 256, in Dura Europos. They bring us to the period, in the thirteenth and fourteenth centuries, when literary references give us positive evidence that the art of knitting was commonly practised in various countries of Europe on an extensive scale.



8. Part of boot and foot of cotton knit sock with striped design similar to that in Figure 7. Origin unknown, probably Syrian Islamic, twelfth or thirteenth century. Length of foot 8½ inches. Photograph courtesy of Metropolitan Museum of Art, New York.

9. Fragment of knitting, possibly part of a sock. Egypto-Islamic, tenth to fifteenth century. The design in blue and white thread consists of bands of geometric patterns. Detroit Institute of Arts.





1. The west end of the grave as found after the removal of a cover slab, showing the mortising of the slabs at the corners. The inner dimensions of the grave were $33\frac{1}{2}$ by 86 inches; the depth was $25\frac{1}{2}$ inches.

GRAVE ROBBERS' LEAVINGS

By Rodney S. Young

Professor of Archaeology, University of Pennsylvania
Director of the Expedition to Gordion, Turkey

OF THE COUNTLESS grave tumuli, or mounds, which surround the site of ancient Gordion nineteen have been dug officially, fourteen by the University Museum expedition in 1950-1952, and five by the German expedition of the brothers Koerte in 1900. Doubtless many others have been plundered by unofficial diggers in ancient as well as in modern times. One of those investigated by the Museum expedition proved to have been plundered in ancient times, evidently shortly after the burial had been made; the bones and the objects considered worthless by the robbers lay in scattered confusion, and the shaft by which the intruders had entered the chamber could be traced. Presumably, if the robbery took place soon after the burial—and there was no evidence to contradict this supposition—the robbers knew that the grave contained objects of value, perhaps gold and electrum jewelry, and these valuables were their objective.

Recent attempts to dig and rob the graves under tumuli

are easier to detect: the trenches remain visible and the dumps of dug earth take a long time to melt down and blend into the landscape. The cuts and dumps made by the German excavators at Gordion fifty years ago are still obvious; and several tumuli investigated by the Museum expedition also showed before digging evidence of recent, less official attempts to find the graves beneath. In ancient as in modern times it must have been impossible to hide the traces of such activity.

The authorities of ancient Phrygia must have been well aware of this deplorable practice, and perhaps an explanation for the careful placing of the graves away from the centers of the tumuli is to be found in a desire to protect them by making them difficult to find. The possibilities of hiding the graves were limited, since the tumuli which served as monuments conspicuously called attention to the existence of graves beneath. In some instances the enormous masses of earth which would have had to

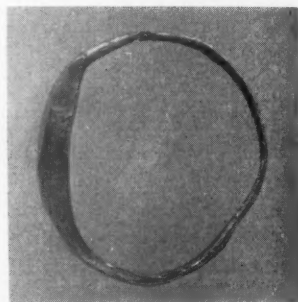
be moved must have given pause to would-be grave robbers; in others, the proximity of the tumuli to inhabited areas. The smaller and more outlying tumuli, however, were not benefited by these additional protecting factors, and the burials seem to have been placed almost anywhere within the circumference to be covered by the mound in the hope that they would not easily be found and robbed.

The activities of modern grave robbers in April 1953 at a tomb some little distance from the Gordion site led to an investigation which proved to be both instructive and profitable. The tomb lay under a small tumulus about three miles due west from Gordion, on the farther side of the Sangarios River. Since this tumulus and others near it are visible from the excavation house against the skyline on the summit of the ridge to the west, we were aware of their existence, but we had never considered digging them because more urgent work lay closer to hand. We were approached, however, by the largest landowner of Kiran Harman, the village on the opposite side of the river, who came bearing gifts—fragments of three alabastra or ointment jars made of the local soft white translucent stone. He stated that somebody, presumably shepherds, had been digging on his property near these tumuli and had left the fragments of alabastra scattered about; he invited us to come and investigate.

The next Sunday afternoon was accordingly devoted to an expedition to the place indicated. On arrival we were surprised to find that on the far side the ridge falls away steeply into a deep gully, and that the tumulus in question lies right at the lip of the precipitous descent. The grave lay well away from the center of the tumulus toward the south and west. One of its ends had been exposed to view by the gradual downward erosion into the gully of the earth which had covered it. The grave robbers, their attention attracted by the exposed edge of the carefully worked end cover slab, had lifted it, thus opening the grave itself to view. The aperture (Figure 1) was quite large enough to give access to the interior, and the robbers had evidently gone in to explore, throwing out and scattering much of the tomb's contents. When we arrived on the scene the area around the grave was strewn with coarse gravelly sand and shredded fragments of wood; more of the same, which lay to a depth of three or four inches over the floor inside the grave, left no doubt as to the source of the scattered material. The

robbers had been hasty or careless in their work, or had dug at night by a poor light. A casual going-through of the dump outside the grave quickly brought to light a small pendant from a gold necklace; a more careful examination of the dump as well as of the earth still inside the grave turned up a number of similar pendants as well as several gold plaques and beads, and crumpled fragments of thin gold foil. Small though these objects were, they could hardly have been missed by anyone going through the contents of the grave with reasonable care. What larger pieces of jewelry may have been carried off by the tomb robbers, we cannot know; in any case, the fragments of glass and stone alabastra had been discarded as of no value, while the small pieces of jewelry had evidently been overlooked.

We had not come equipped to screen the earth and when we returned a week later and sifted the earth from the dump and from inside the grave we were rewarded by finding several additional pieces. The police were notified and asked to be on the lookout for jewelry or other objects which might have been taken from the grave. A month later they brought in one more gold pendant, a bead, and a gold ring, all of which had been



2. A small gold ring from the grave, recovered by the police. Part of it was recently flattened in an attempt to make it larger. Present diameter ca. $\frac{3}{4}$ inch.

seized from a local peasant. The small ring (Figure 2) had been damaged in an attempt to make it bigger by hammering for re-use as a wedding ring. The damage was not serious, however, since the ring had originally been merely a hoop of fine gold wire; but this attempt to make it bigger served to confirm other evidence that the occupant of the grave had been a young girl not fully grown. We were inclined to think that the pieces seized by the police had not come from the original haul of the grave robbers, who would have been on the lookout for more such small gold objects if they had discovered even one, but rather that they had been found by local people during the week between our two visits, after it had become known that gold jewelry had been found. If the occupant of the grave had been decked out in full panoply one may assume that in addition to the ring and the necklace recovered by us she had worn also bracelets, pins and earrings. These larger and more conspicuous pieces may have contented the first discoverers of the tomb, so that what remained when we arrived upon the scene was literally grave robbers' leavings.

The grave itself was a cist lined with carefully worked slabs of soft creamy-white limestone. Two large slabs



3. Fragments of the wooden coffin, resting on the cover slab removed by the tomb robbers. The planks which formed the side walls ended in tongues which fitted into holes in the corner posts, while in the upper edges of the sides were round holes, irregularly spaced, to hold pegs for fastening on the lid.

served as a floor; on them stood the wall slabs, two at each long side, one at each end, the corners neatly mortised (Figures 1 and 4). The whole had been covered with three rather thicker slabs of the same stone, one of which had been removed by the tomb robbers. Most of the interior space had been occupied by a wooden coffin, the outside of which had been painted dark red. Color was still preserved on the outer faces of some of the planks from the sides of the coffin, but in addition the floor of the grave was stained red in a continuous line around the four sides, about two inches in from the inner wall faces, where the red color had either peeled or washed down from the sides of the coffin. This stain gave the approximate dimensions and position of the coffin. Among the material left scattered around by the robbers outside the tomb were enough significant fragments of the coffin (Figure 3) to allow of its reconstruction on paper (Figure 4). The dark brown wood was of some species of conifer, probably cedar. The coffin was held together not only by neat mortising at the corners but also by large iron nails, several of which were found inside the grave.

Of the body only the slightest traces were found: slivers of bone and two complete molars of rather small size. These last suggested that the body had been that of a young person. The jewelry in general, and the small size of the gold ring in particular, suggests that the body was that of a girl who died in her teens. The teeth were found near the east end of the grave; it is probable that the head lay toward the east.

The stone slabs of the tomb were fitted closely against the sides of the cist or shaft dug to receive them. Only at the northwest corner was there a little space between the cutting and the outer faces of the slabs; and here were found fragments of several alabastra. As these had been sealed in from above by the covering over the grave they can have got into the crevice only before the grave was closed, and their broken state suggests that the contents—oil, perfume, or ointment—had been used at the funeral and the empty bottles broken and discarded before the grave was sealed.

After the three cover slabs had been put in place, evenly spaced wooden logs were laid over them, across the width of the grave. Six of these could be observed over the two cover slabs which had remained undisturbed; probably there were nine in all, with three

TOMB NEAR KIRAN HARMAN

STONE CIST

c. 2.15 x 0.85 m. x 0.65 m. deep.
2 stone slabs form floor;
3 cover slabs (dotted lines)

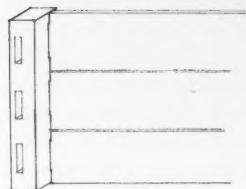
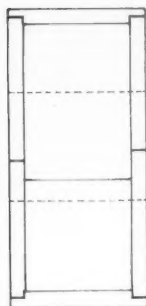
Scale: 0 10 20 30 40 50 cm.

WOODEN COFFIN (reconstructed)

Boards ca. 10 cm. wide morticed into corner posts 10 x 10 cm.; merlons are c. 11 x 25 cm. x 5.5 cm. deep. Traces of red paint on boards, pattern illegible.

Scale: 0 10 20 30 40 50 cm.

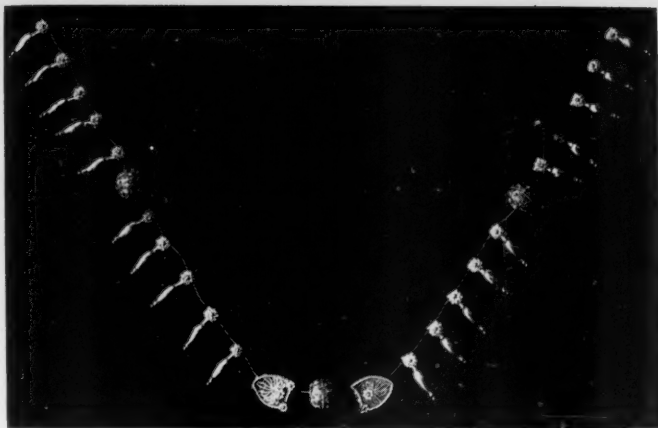
4. Plan of the grave (left) and reconstruction of the wooden coffin. Drawing by Dorothy H. Cox.



5. Construction over the grave, showing the wooden cross-logs and clay. The opened end of the grave lies to the left, out of the picture.

more over the westernmost cover slab. Clay was laid between these logs to a depth sufficient to cover them; then two longer logs were laid crosswise on top, one over each long side of the grave, and the space between them again filled with clay (Figure 5). The largest of these round logs was about eight inches in diameter. In some places the wood was almost intact; in others it had rotted away entirely but left a perfect mold in the stiff clay. The purpose of this wood and clay structure on top of the stone covers of the grave may have been to prevent the entrance of water from above. Laid as they were, the wooden beams can hardly have been intended to relieve the stone cover slabs of the weight of the earth above.

The care with which the grave was built, the elaborateness of the coffin and the heaping of a small tumulus over all to serve as a monument, suggest that the deceased was the daughter of a wealthy family. The profusion of fragments of glass and stone alabastra suggests a lavish use of perfumes and unguents at the funeral. The gold jewelry which had probably been worn in life again indicates wealth; though the pieces recovered are small they are elaborate and of the finest workmanship. In all we found twenty-one small pointed pendants, two shield-shaped plaques, and three small spherical gold beads ornamented with wire filigree and fine granulation. All these were of

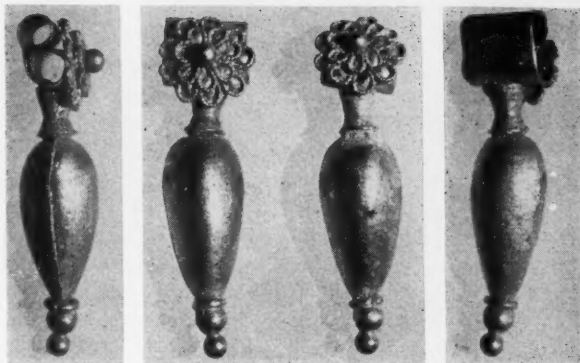


6. The gold necklace found in the grave, as tentatively reconstructed.

GRAVE ROBBERS' LEAVINGS *continued*

the same scale, workmanship and style of decoration, and could therefore be assigned with confidence to the same necklace. In addition to these were found one plain spherical bead and a hollow clasp-like piece, decorated with leaves in relief. The plain bead and the clasp are of gold somewhat different in color from that of the necklace, and perhaps they belonged to other pieces. Many small scraps of thin gold leaf were also found, but these were so small and so badly crumpled that it was impossible to ascertain their original form or purpose, though it is likely that the gold leaf was used to sheath an article of some perishable material such as wood—perhaps a jewel box.

The reconstruction of the necklace (Figure 6) is entirely arbitrary since the original string or thread had long since perished and the components had been scattered. A balanced arrangement was doubtless considered desirable in the original, and a balanced effect has therefore been sought in the reconstruction, which makes use of all the pieces found except for one pendant (twenty-one were found). Each of the hollow, drop-shaped pendants is made of several pieces welded together (Figure 7). When we consider the size of these pendants we cannot but be astonished by the minuteness and the delicacy of the workmanship.



7. Gold pendants from the necklace: side, front and back views. Each drop of thin sheet gold was hammered out over a form; in some a seam is visible. The disk and two knobs at the bottom of the pendant were made separately and soldered on; the cylindrical neck pieces were soldered on at the top. To these in turn were soldered thin gold sheets rolled to form a double cylinder through which threads could be passed. This attachment device is masked by a double rosette of fine wire filigree, cabled to give a beaded effect. At the center of each inner rosette is a drop of molten gold. Length of each pendant, $\frac{5}{8}$ inch.

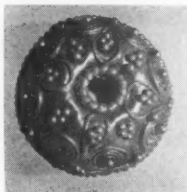


8. Shield-shaped plaques from the necklace: front and back views. In front a border of heavy gold wire gives the effect of spools or reels. Within this edging is an applied palmette outlined in fine cabled wire similar to that of the rosettes on the pendants. At the heart of each palmette and at each of the upper corners of the plaque is a single rosette, the petals outlined in wire and with a granular drop in the center. On the back are two parallel cylinders like those on the pendants. Length 9/16 inch.

The shield-shaped plaques (Figure 8) are also made of several component parts. In style, technique and workmanship they are exactly similar to the pendants, and both must have been made by the same master jeweler. The decorated gold beads (Figure 9) use the same technique of decoration with applied wire filigree and granulation. Of the same gold and decorated in the same technique as the pendants and plaques, they can safely be attributed to the same necklace.

The cylindrical "clasp," on the other hand, is of redder gold and decorated in a different technique, and probably belonged to another piece of jewelry (Figure 10). The cylinder itself is too big, and its openings too wide, to have been strung as a component part of a necklace. The other odd piece found, also of redder gold than that of the necklace, is an undecorated spherical bead, pierced for stringing, and rather larger than the beads of the necklace (diameter $\frac{3}{8}$ inch).

No fragments of pottery or of bronze were found in the grave or in the earth cast out from it by the robbers. We must therefore assume that there had been no grave offerings other than the girl's personal jewelry, which no doubt decked her body. The only objects recovered in addition were the fragments of stone and glass ointment bottles, apparently used and discarded at the funeral.



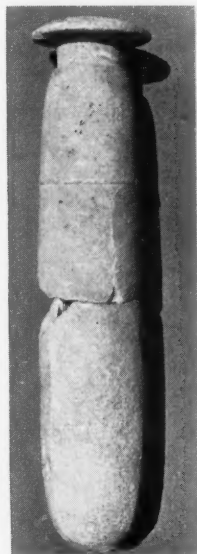
9. A gold bead from the necklace. Each hollow bead is made of two sections, the seam masked by a band of fine granulation. Similar granulation borders each opening. The surface is decorated with fine wire applied in reverse spirals linked by high loops, a granular drop at the center of each spiral and groups of four smaller drops inside and between these loops. The wire is not cabled as in the pendants. Diameter 5/16 inch.

10. Cylindrical gold clasp, the two halves made in repoussé technique and soldered together. The form is a kind of quatrefoil, the two upper sections bearing a leaf pattern in relief, the lower an ornament of zigzag and opposed triangles. Beaded grooves ornament the necking at the top and beading borders both openings. The object could have been used as a clasp, perhaps to mask a knot. Length about 7/16 inch.



GRAVE ROBBERS' LEAVINGS continued

Although there were fragments of six or seven stone alabastra only one could be mended into a nearly complete vessel (Figure 11). This conventional alabastron shape was apparently made by turning on the wheel or lathe. The elongated shape with nearly straight sides, the absence of handles, the wide neck and the low raised band well below the shoulder suggest a relatively late date. More helpful for dating is the fragmentary glass alabastron (Figure 12) probably imported from Syria or Egypt. This was made of threads of different colored glass wound around a sand core; while the glass was still soft the threads were drawn upward and downward to make the "feather pattern" which is considered characteristic of the fourth and third centuries B.C. The glass bottle should therefore date our burial within these limits and the stone alabastron would indicate a similar date. But the jewelry itself should serve to narrow these limits somewhat. The palmettes of the shield-shaped plaques (Figure 8) have recurved or double curved leaves which are familiar from Attic grave stelae and in jewelry of Greece and Etruria from the end of the fifth century through the fourth; the stylistic affinities of these palmettes suggest a



11. Alabastron of local white stone, from beside the cist. Height $7\frac{5}{8}$ inches.



12. Fragmentary glass alabastron with "feather pattern" decoration.

fourth-century dating for our grave rather than a later one. Historically, too, the fourth century and the first part of the third, before the coming of the Galatians, offer a better background of prosperity and trade connections with foreign lands for a burial such as ours than does the later period. We may therefore assign our grave with assurance to some time in the fourth century B.C.

Our two Sunday afternoon expeditions into the Gordion hinterland thus resulted, thanks both to the initiative and to the oversight of the grave robbers, not only in the recovery of some first-class gold jewelry, but also in a considerable widening of our knowledge of the burial customs of ancient Phrygia. Up to the discovery of this burial all the tumuli dug could be dated from the late eighth century through the middle of the sixth; furthermore, the tumuli of later date (mid-sixth century) covered cremations rather than inhumations. We now know that tumulus building was continued in the neighborhood through the fourth century, and that inhumation either ran parallel to cremation throughout, or was revived at some time after the sixth century. While we cannot approve of grave robbing (except by properly licensed practitioners), in this case we must be grateful to the offenders for having led us to a grave rich in information as well as in finds.



THASOS: *Cultural Crossroads*

ALTHOUGH not so well known as Samothrace, its neighbor island, Thasos certainly deserves as much glory, but for other reasons. In Thasos there were no mysterious rites of a Kabeiric cult to ensure the island's fame. No statue so striking as the Victory which graces the Louvre has been offered by Thasos for our admiration. And yet, contrasted with wild, solitary Samothrace, how welcoming it seems! In the heart of the Thracian Sea, between Mount Athos and Cape Paxi, Thasos offers its harbor to the tempest-tossed sailor; from the height of its acropolis it overlooks the mainland as far as the mountains of Pangaeum, Orbelos and Rhodope.

Few islands in the Aegean Sea enjoyed the advantages which Thasos had. Its agricultural, mining and maritime resources, its island security facing a mainland only partially Hellenized yet rich in wheat, in money and in men valued as slaves, made of it a land of promise toward which sailed "the misery of all Greece" (Archilochus, Diehl 3, *Frag.* 54): When Telesicles, the traditional founder of the city, and his companions from the island of Paros arrived at the beginning of the seventh century B.C., they were undoubtedly not the first Greeks to land on Thasos, but in any case they were the first to settle there permanently. In less than a century the modest set-

tlement became a capital, sovereign of a "Thasian continent," mistress of extensive trade with Pontus, Egypt, Syria and even Sicily and southern Italy. Though its prosperity was temporarily impaired by later events, even war with Athens in 463 B.C. and civil and foreign wars at the end of the fifth century failed to damage permanently the fortune of the city. Scarcely had peace been re-established when Thasian merchants once again took to the ancient routes. At its start the Pax Romana made the city still more prosperous than it had been in the splendid Archaic period of which Herodotus speaks (VI, 46). This wealth lasted to the end of the Late Empire. It was not until the period of the invasions, which came very late, perhaps in the eighth century A.D., that prosperity dwindled. Far from the main routes, in a corner of the Aegean, it is surprising to find so much prosperity. Every day, however, there is new evidence of it; slowly from among the modern dwellings of laborers, woodsmen and fishermen arises the form of the ancient city—strange because of the diversity of the worlds which were united in it (Figure 1).

Before undertaking archaeological exploration we traced the plan of most of the ancient walls and harbors. The work of the French School at Athens since 1912 has

1. Thasos, general plan of modern village and excavations.

• Now on the staff of the Faculté des Lettres of the University of Lyon, Jean Pouilloux was for ten years a member of the École Française d'Athènes and took part in the School's excavations at Delphi and at Thasos. The first large volume resulting from his work at Thasos has just appeared: *Recherches sur l'histoire et les cultes de Thasos*, Volume I. This covers the period from the founding of the city to 196 B.C. The second volume, written in collaboration with Mlle. Ch. Dunant and now in press, will continue the story to the fall of the ancient city.



Above: **2.** Satyr holding a drinking cup. Carved stone relief on one of the city gates. The figure is almost two meters high. (Photo V. Grace)

Right: **3.** The so-called Gate of Zeus. In the background, at left, stands the pillar which gives the gate its name. On it is shown in relief a seated god receiving a messenger. (Photo P. Amandry)

resulted in establishing the entire circuit of fortifications. In this circuit were found many sculptured gates, of which only one badly mutilated example had previously been known. This was the relief of Herakles shown as an archer which had been torn away from its gate and brought to the Museum of Istanbul; a relief of Dionysos which accompanied it was lost during transport. The reliefs discovered since then have stayed in their places. An Archaic satyr (Figure 2) holding a *kantharos* (two-handled drinking cup) in his hand enters gaily into the city. A more enigmatic representation occurs at the so-called Zeus Gate where a winged attendant brings a message to an Olympian god seated on a throne (Figure 3). Elsewhere, at the Gate of the Chariot and at the so-called Gate of Semele (more probably that of Hermes and the Graces) the Thasians erected the effigies of their gods; they were guardians as well as ornaments, following a fashion more common in Asia than in Greece itself, a testimony to Thasian individuality in the heart of the Greek world.

The excavations have brought to light sanctuaries, centers of civic life and residential quarters. Certainly not all is yet clear; the site is very large and eleven centuries of ancient life accumulated a great deal of evidence. Close

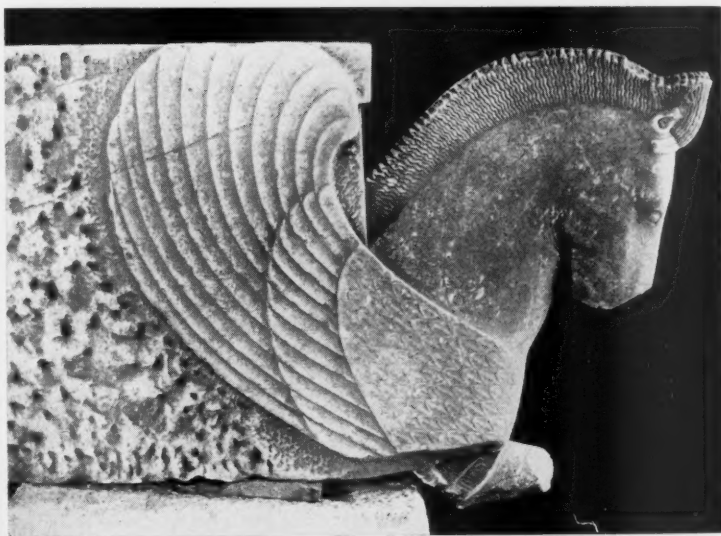


THASOS *continued*

to the acropolis are the buildings of the sanctuary of the Pythian Apollo, now reduced to their foundations. Only the high wall of its terrace still dominates the town. The sanctuary of Athena Poliouchos, which, as inscriptions tell us, was associated with the Pythian god as early as Archaic times, still remains to be discovered among the ruins of the Genoese fortifications of the acropolis. One huge unfinished marble *kouros* (male figure) of the beginning of the sixth, or perhaps of the seventh, century B.C. has been found. But more discoveries have been made where the slopes of the acropolis descend to the coastal plain: from north to south there have been found, first, an Archaic quarter where Ionian pottery has appeared, proving the presence here of important Anatolian elements in the seventh and sixth centuries; next, the sanctuary of Poseidon; then the Dionysion, where good fortune has preserved sculptures and inscriptions dating from the end of the fourth century, sufficient to give a clear picture of the sanctuary. Above all there is the Herakleion with its double sanctuary, as mentioned by Herodotus. Here were found beautiful marble sculptures—a horse's head (Figure 4) and the strange *protome* of Pegasus (Figure 5). From here also came a collection of architectural terra cottas and antefixes with gorgon heads



4. Marble horse's head found in the sanctuary of Herakles (Herakleion).



5. Protome representing the winged horse Pegasus. From the Herakleion.

THASOS *continued*



6. Terra-cotta antefix from the Herakleion, showing a gorgon's head in relief.

7. Terra-cotta antefix showing Bellerophon riding on Pegasus. From the Herakleion.



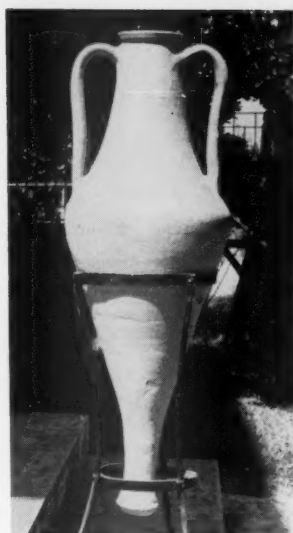
8. The agora, after the 1954 campaign, as seen from the Sanctuary of Pythian Apollo above.

and Bellerophon riding Pegasus (Figures 6 and 7). These show definite Oriental influence.

Most recently excavation has been concentrated in the agora, the center of civic and commercial life (Figure 8). This had been identified as early as 1914 and the outline of the area was established by trenches dug in various places. Intensive excavation of the agora started in 1948. Seven campaigns have brought to light almost the whole of the vast complex, about five acres in area. Porticoes which bounded the great court on three sides were cleared, but even more important are the cult buildings which have come to light in the interior of the square, as well as the statue bases, dedications and exedras. With its chapel, its altar, its enclosure walls and the circular building annexed to it, the sanctuary of Zeus Agoraios is unique for the cult of this god, "the highest representation of the civilizing genius which effectively aided in the formation of the Greek 'polis'" (R. Martin). Nearby is the sanctuary of the hero Theogenes, the athlete and politician who became a healer. Although the building is too badly destroyed for restoration, it is fortunate at least that many texts have been found, for with their help it is possible to reconstruct the history of this hero and his cult from the fifth century B.C. to the third century A.D. On the east side of the agora a row of public build-



9. Handle of a Thasian amphora, bearing a stamp representing a sphinx. The name of the city is above; the name below is probably that of the manufacturer. (Photo V. Grace)



10. An amphora from Thasos—the type which bears the stamp shown in Figure 9.

ings has been cleared, among them a structure with projecting wings, dating from the fourth century B.C. This appears to be a replica of the Stoa of Zeus in the Agora of Athens.

Finally, behind the agora a Byzantine basilica was explored. This has not only given us a sixth century Christian monument to which was annexed the martyrion consecrated to Akakios (doubtless the soldier martyred in Cappadocia in the second century), but it has also yielded a treasure trove of inscriptions from every period, thus doubling the number of Thasian texts previously known. Here we have a unique source for the commercial, religious and political history of northern Greece from the sixth century B.C. to Byzantine times.

As the clearing of the southeast and southwest sides of the agora continued, the work of 1954 still further enriched our knowledge of the city's economic life. We found a table of measures which defines the exact capacity of the amphorae containing the wine of Thasos which was so universally appreciated in ancient times. These vases, whose stamped handles (Figures 9, 10) have been found in so many parts of the ancient world, help us to form a correct idea of commercial relations in Hellenic and Hellenistic times.

During 1954 our impression of the city and life of the

Roman period was also clarified by the clearing of the whole length of the southeast stoa (Figure 11), which was paralleled at the back by a hypostyle hall and was certainly a commercial center during the first century of our era. A dedicatory decree of a rich family of the first century fixes the date of this huge monument; it demonstrates the social evolution which was then producing a greater and greater concentration of wealth and of power in great families amid a citizenry growing constantly poorer.

While again bringing up long-debated questions, the extension of work in the east angle of the agora produced documents important for the Archaic history and religion of the city. The oldest and most noteworthy is the *mnema* (Figure 12)—tomb or altar or perhaps both—of Glaukos, son of Leptinos, who headed the expedition which in Archilochus' time brought Parian reinforcements to Thasos. The text was inserted in a carefully built monument of yellow tufa—a stone rare in Thasos, if found there at all. Not only is this text the oldest Thasian inscription hitherto known, and an example of *boustrophedon* writing of the seventh century B.C., but also it has a mythological echo in describing the Parians of the expedition as "sons of Brentes." Thus it discloses the importance of mythological tradition in the eyes of the conquerors.

THASOS *continued*



11. The portico of the southeast stoa in the agora, as it appeared after the 1954 campaign.

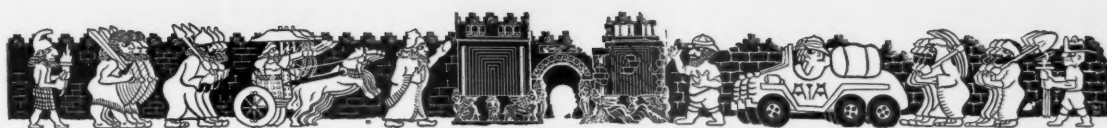


12. The memorial of Glaukos, discovered in the agora in 1954.

Later texts had already suggested it; the new inscription proves it: once more mythology is brought in to justify a political conquest. It is more likely to have been a creation after the event than the residue of an ancient story which a vague tradition would have preserved.

Religious documents also were found; at the eastern angle of the agora we re-examined and left open a sacred passage which had been excavated many years ago. The first investigation, certainly profitable but hasty and destructive, took place in the year 1863. Now it is possible to study the monument, to discover the exact character of the passage bordered by walls. Exhaustive digging has not settled everything, but many doubts have been removed by entirely clearing the passage. On the northwest wall were engraved lists of magistrates, as we have known for a long time; in the southeast wall was a deep niche containing an altar. The niche was once decorated with three sculptured plaques (taken to the Louvre in 1864) on which is represented a procession of gods—apparently native deities, Hermes, Hecate and Nymphs, who stand behind the door of the city or the sanctuary to welcome the divinities of the colonists, the Graces, Apollo and an attendant, identified by some as Peitho. Here one might expect to find Athena, for in the character of Poliouchos (Protector of the City) she is seated on the acropolis close to Pythian Apollo, and here at the southeast end of the passage has been recognized an altar which a dedication attributes to Athena Propylaia. Even if it is difficult to identify the divinity who crowns Apollo on the Louvre plaque, the arrangement is still very important. Unique in Greece, a religious group of this kind expresses by the duality of its divine families the double character of the city founded by Greeks in Thracian territory, where the colonists had to adjust themselves to the native element.

Many problems still remain. What was the purpose of this sacred passage? Further excavation will perhaps explain all the particulars of this piece of road, perhaps also why Glaukos' memorial remained standing among buildings dating at least eight centuries later. These questions were left unresolved by the latest excavation. But just as the studies of numismatists and patient research on Thasian amphora handles disclose the economic importance of Thasos, just so archaeological exploration, in revealing the centers of religious and civic life, makes understandable the essential individuality of Thasos, where Greek and native culture came in contact, and cultural interaction is more evident than elsewhere.



† Thomas J. Dunbabin

them have had the opportunity to make history as well as to reconstruct the past. Dunbabin did both magnificently.

"priest-ruler" and that the *mkrb* institution is a theocracy. The fact that one or two individual *mkrb*(s) have been priests does not prove either point; and the etymology of *mkrb* in "priest-ruler" is highly controversial. The main historical fact of the *mkrb* period is that the *mkrb*(s) presided at the first unification of different tribes into a single state. It thus seems reasonable to seek the meaning of *mkrb* along the line of that most important political event, which is philologically quite possible.

V
8
/
3

part of the *mkrb* period at the end of the ninth century or the beginning of the eighth. In Jamme's opinion, a Greek influence on the South Arabic alphabet, and especially an influence in the sixth century B.C., is not acceptable, despite the material identity of several letters.

The last South Arabian question discussed was that of the so-called ritual hunt, a theory presented in 1948 by A. F. L. Beeston on the basis of eight inscriptions. Although it is possible that the ritual hunt actually was a part of South Arabian culture, its existence has not yet been proved by any inscription.

Turning to research in ancient North Arabian studies, progress has been slow but steady. The important Dedanite and Lihyanite inscriptions have been subjected to an intensive re-examination by Werner Caskel of Cologne. As a result, he proposes placing the kingdom of Dedan and its successor, the kingdom of Lihyan, after the collapse of Minaean power, an event which he dates ca. 160 B.C., although South Arabic specialists date it ca. 125 B.C. (Jacques Ryckmans) or 35 B.C. (Albright). Since the Nabataeans were in occupation of Dedan-Lihyan by 9 B.C., and probably for a short time previously, it does not seem possible to compress both kingdoms, Dedan and Lihyan, into the brief period between the Minaean downfall and the Nabataean conquest of Lihyan. Caskel attempts to get around the difficulty by the theory that only some of the Lihyanite kings reigned before the Nabataean conquest; the rest come after the downfall of Nabataean power in A.D. 105. He finds support for his theory in the fact that the Lihyanite script exhibits two clearly defined phases. But it is doubtful if the differences between the two forms of Lihyanite script are of such a character as to make it necessary to postulate a real break in the continuity of Lihyanite history. Caskel's whole chronological scheme depends too largely on an elaborate classification of the inscriptions according to the type of script employed, a classification with which few probably will be inclined to agree. A much more reliable reconstruction of early North Arabian history is to be found in the essay entitled "Dedan" which W. F. Albright contributed to the *Festschrift* in honor of Professor Albrecht Alt.

The first comprehensive treatment of

the Thamudic texts has come from the hands of a Belgian scholar, van den Branden. Some years ago Winnett drew attention to the existence of five distinct Thamudic scripts. Van den Branden demonstrates the various stages which the primitive script went through before these five varieties came into being. His alphabetic tables, however, according to Winnett, are not to be trusted implicitly, and the translations which he proposes of many Thamudic texts, especially of the longer and more important ones, frequently fail to inspire confidence. A new collection of Thamudic material was published in 1952.

In the Safaitic field the most important achievement has been the gathering up and republishing of all the material available up to 1943. Since then two hundred more texts have been published, together with a report on the first excavation of a Safaitic burial. Newly found inscriptions show that the oldest Safaitic inscriptions date from the first century B.C. How long the script continued in use must remain uncertain until more unequivocal evidence is forthcoming.

This Symposium reflects, as it were, a third wave of interest in pre-Islamic Arabia. First came the descriptions of the travelers; then the studies of the philological explorers of Beduin *mores* and poetry accompanied the early investigators of South Arabian antiquities. Now a concerted attack on the problems of the pre-Islamic conditions of the Peninsula is under way. Already during the last fifteen or twenty years archaeologists in South Arabia, epigraphers in Central Arabia and linguists throughout the Peninsula have considerably enlarged the bounds of our knowledge. At long last a historical and cultural synthesis appears, at least for certain regions, to come within our reach. The present Symposium has had the double merit of tallying the advances made and pointing out which gaps most urgently need filling. Archaeological research in the South, the organization of our knowledge of the languages and dialects throughout the Peninsula, the study of the political and cultural interrelations of the powers that controlled the area in the pre-Islamic period or periods, and ultimately a fresh presentation and interpretation of the currents of civilization—these are the main tasks which

emerge from the statements of the participants in this Symposium as urgent requirements of further progress. Let it not be forgotten that the urgency of work in an area such as the Arabian Peninsula is increased by the necessity for scholarship to avail itself of the usually short-lived opportunities which the ever-shifting political constellations will afford it.

Salvage Archaeology in the Upper Missouri Basin

At least a partial picture of the cultures of Indians living in the northern Missouri Basin, both in prehistoric times and in recent centuries, is being pieced together thanks to archaeological salvage operations. These operations are surveys and excavations carried out under the River Basins Surveys project of the Smithsonian Institution and various Federal and State cooperating agencies. A large number of archaeological sites destined to be inundated as a result of the Federal Government's river development program has been investigated.

One of these sites is in the basin of the Angostura Reservoir on the Cheyenne River in South Dakota. Here lived a people, presumed to be of the same physical type as present-day Plains Indians, whose life as hunters is attested by a characteristic javelin point known as the Angostura point. According to Carbon 14 tests the site was occupied about 7,000 years ago. The typical Angostura point was not found here associated with identifiable animal bones, although in other places it was found with bones of extant animals. A related type of javelin point with a somewhat different shape was found at other sites in association with bones of an extinct variety of bison, but unfortunately the date of these sites could not be ascertained by Carbon 14 methods. This is only one sample of what salvage archaeology may be expected to recover.

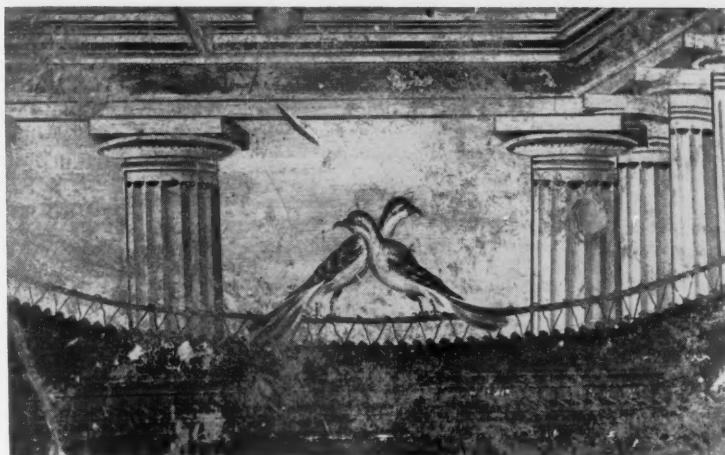
Another story reconstructed through the work of the River Basins Surveys is that obtained from excavating village sites near Pierre, South Dakota, which will soon be flooded by the Oahe Dam. The story covers a period of two hundred years, the end of which is signaled by the appearance of European artifacts at the time of the arrival of

the first French fur traders in the Upper Missouri area. During these two centuries the way of life of the Indian inhabitants passed through six distinctive phases. The transition is gradual in many respects but there is a sudden change in the type of dwelling, from rectangular earth lodges to round lodges. The new type of dwelling must have been introduced from the outside. The explanation is that Indians from the Great Plains, who lived in circular lodges, must have been driven from their former home and settled among the inhabitants of the Oahe Dam sites, whose houses were rectangular. The area of the Great Plains has been subject to periodic droughts. Apparently the worst of these, which took place in the middle of the sixteenth century, turned the Great Plains into a desert and forced the agriculturalists to move out, part of them to the Upper Missouri Valley. These Indian "farmers" brought their own culture with them, part of which they carried on in their new home, but at the same time they absorbed some of the culture of the Missouri Valley Indians. Thus we find both gradual and sudden changes in the way of life at these Upper Missouri Valley sites.

Pompeian Codex

(Prof. C. Bradford Welles of Yale University has provided us with the following account.)

Students of Pompeii, and especially those acquainted with the "Codex Typologicus Pompeianus" established by Tatiana Warsher in the thirties, will be interested in learning that its production has been actively resumed. It was conceived initially as a device by which her unrivaled collection of Pompeian photographs and her great knowledge of the excavations could be made available to scholars generally. The need was not for a new book on Pompeii nor even for a revision of A. Mau's classic "Pompeii: its Life and Art." It would be possible to write an up to date Mau only with the inclusion of the "New Excavations," those of the past fifty years, of which the systematic publication on a sumptuous scale has begun. Until this vital project is completed, a new edition of Mau would be a torso, and in any case such an edition is not the prime necessity. If the



Detail of a fresco from the House of the Labyrinth (VI, xi, 10), showing doves perching on a curtain in the interior of a Doric colonnade. (Photo Warsher)

riches of Pompeii are to be available to scholars, what is needed is a publication of the material. A large part of the "Old Excavations," which went forward irregularly over one hundred and fifty years, has never really been published at all except through brief and selective mention in contemporary reports. Many paintings were never copied, many buildings incompletely recorded, many finds scattered, separated from their records and lost. This was

not due to any lack of skill and devotion on the part of the excavators, but the early archaeologists did not realize their full responsibility. They did not recognize that excavation is destruction.

Much more can be learned from the Old Excavations if walls are bored, foundations searched, drains followed, although obviously the ruins must not be allowed to perish. Until now, however, it has been necessary to go to Pompeii even to start any study of the

Interior of the colonnade of Popidius, at the south end of the Forum. This colonnade was very probably hung with curtains like those pictured in the House of the Labyrinth. (Photo Warsher)



site, and very few of the special investigations which Pompeii invites have been carried out. With the Codex, on the other hand, it is possible to study Pompeii anywhere, and to develop projects which can then be completed on the spot. The Codex should give rise to a new wave of Pompeian studies.

Starting as a catalog of photographs, a kind of photographic record of Pompeii, the Codex developed into something more. For each block, each house, Mrs. Warsher searched her memory and the earliest publications to assemble all that is known about the buildings as they were excavated. The result is not a book but an assemblage of descriptions, comments and photographs, as extensive as the evidence and the importance of the monument required, and enlivened by many essays on Pompeian subjects. Each block or smaller entity is a "chapter," which may run up to one thousand manuscript pages with two hundred illustrations. The following blocks are now available on microfilm: I, 1-3 and 5; VI, 6-10, 12-14; VII, 2 and 4; IX, 1 and 2; and parts of V, 1 and IX, 8. Block IX, 3 is almost ready. Since the Codex concerns itself only with private houses, it will be evident to students of Pompeii that more than half its projected material has been covered and the end is in sight.

As it was clear from the beginning that the Codex was not adapted for reproduction by printing and the cost of copying the manuscript and the photographs would be prohibitive, it has been photographed, and microfilm prints of all or any part of it may be purchased through the Yale Library at a price set to cover the cost of manufacture and Mrs. Warsher's irreducible expenses. The return to her is very small; her reward will come from the use of the Codex by generations of future scholars.

Appointments at School in Rome

The Professor-in-Charge of the School of Classical Studies of the American Academy in Rome for the two-year term 1955-57 will be Professor Mason Hammond of Harvard University. He succeeds Professor Lily Ross Taylor of Bryn Mawr College, who has been in charge of the School of Classical Studies since 1952.

The appointment of the Fellows in Classical Studies for the year 1955-56 has been announced by the American Academy in Rome. They are:

James I. Armstrong, Princeton University
Brooks Emmons, Harvard University
John A. Moore, Amherst College
Norman Neuerburg, Institute of Fine Arts, New York University

Exploration of Masada

The hill or rock of Masada, which rises to a height of some 1700 feet, lies near the western shore of the southern part of the Dead Sea. Professor Avi-Yonah of the Hebrew University has sent us the following account of a survey recently conducted there.

In December, 1954 the Scientific Committee for the Advancement of Archaeological Research in Israel, presided over by the Minister of Education, decided to undertake a survey of Masada. The Hebrew University, the Department of Antiquities and the Israel Exploration Society cooperated in this task. The survey was directed by M. Avi-Yonah, Dr. N. Avigad and Y. Aharoni; Messrs. E. Dunayevsky and S. Guttman were associates.

The expedition's aims were these:

- a) to plan the remains visible on the surface and establish their identity;
- b) to make trial soundings in order to determine the depth of debris to be cleared in case excavation should be undertaken;
- c) to examine the remains at the northern end of the rock which were discovered by Mr. Guttman.

The expedition numbered twenty-five persons including University students and volunteers from various settlements. The survey, which lasted from March 18 to 29, 1955, was made possible by the assistance of the Israel Defence Army. A base camp was established at the foot of the rock, the ancient winding path leading up to Masada from the east was repaired and the expedition's camp was established on top of the rock.

In the course of the survey all the buildings visible on the surface of the rock were measured and plans were drawn up. It was found that the plans made in 1932 by a German expedition headed by Professor A. Schulten were

inaccurate. Trial soundings showed that the floors of the buildings are covered by 0.75 m. to 1.00 m. of debris; the architectural finds in these soundings included a portal of Herodian style decorated with plaster moldings.

An examination of the remains at the north end of the rock led the expedition to undertake more extensive clearance here. As a result it was seen that the constructions at the north end of Masada were built in three tiers, the topmost at the north end of the rock surface and the other two on two levels respectively 14 and 20 meters lower down. The topmost building was a dwelling of Hellenistic style, perhaps from the time of the Maccabees. It consisted of three small rooms surrounded by a corridor and flanked by six larger rooms, three on each side. The latter were paved with mosaics in black and white geometric designs; these are the earliest mosaics so far found in Israel. The house was adorned with columns and capitals of Ionic style.

At a later period (the time of King Herod?) a heavy sloping buttress wall was added to this house on the south. In front of it was a bench and on the wall beside it were scratched graffiti, among them a representation of a fortified building surrounded by palm trees. In the debris in front of the bench were found date pits, the remains of some organic material, possibly bread, salt, leather soles and thongs, textile fragments, etc.

A semicircular platform had been constructed in front of the house. From this one descended to the lower level by winding steps of wood and stone. The staircase, which passed through the rock and was invisible from outside, led to a platform on which stood a structure formed by two concentric circles. Its purpose has not yet been established. From this platform a staircase of similar character led down to another terrace from which the rock falls off steeply on three sides. Vaulted substructures which enlarged the rock surface made possible the construction of a hall nine meters wide, surrounded by columns (see figure) four meters high. These columns have sandstone drums covered by plaster flutings. Their capitals are of a fairly pure Corinthian style. In the southern corners of the hall were two large pillars decorated with a plaster imitation of the typical Herodian stone dressing with



Corinthian capital of Herodian period.

bosses and drafted margins. The balustrade which surrounded the hall was decorated with frescoes in many colors; the ornaments are geometric patterns and imitations of marble. The name of a Roman soldier, in Greek letters, had been scratched on one of the pillars. The hall was surrounded by spacious corridors which were connected with substructures now partly destroyed and partially buried.

The whole structure appears to correspond with the description of the palace of King Herod which Josephus included in the seventh book of his *Jewish War*. This description, and especially the mention of a secret passage leading to the top of the rock, has been verified on the spot, although not all details seem to correspond. We have here one of the most interesting and best preserved Hellenistic buildings in the country, dating from the time of King Herod.

In the whole area of Masada there is evidence of a tremendous conflagration which marked the dramatic end of the siege by the Romans in the year A.D. 73. The results of the survey point to the many possibilities of enlarging our knowledge of the period of the Second Temple; large-scale excavation should, therefore, be undertaken.

Harvard Expedition to Baluchistan

On March 20 the members of the Peabody Museum-Harvard Expedition to West Pakistan landed in Pasni on the Mekran coast of Baluchistan.

The staff included: Dr. Henry Field, leader; Mrs. Field, photographer and recorder; Mohammed Idris Saddiqi, representative of the Pakistan Department of Archaeology; Raouf Khan, geographer; S. A. Rizvi, geologist; Naeem Beg Chugti, zoologist; Mohammed Akram, zoological collector; Mohammed Hasham, animal collector; two drivers and one coolie. The University of Karachi collaborated by sending the above specialists.

The 500-mile traverse across former Baluchistan was from Pasni-Turbat—Khoshab—Panjgur—Sorab—Kalat to Quetta, which was reached April 6.

The principal objectives were to investigate cultural and racial links between the Iranian Plateau and the Indus Valley.

During this reconnaissance, painted pottery of Chalcolithic and later periods was collected on a series of mounds (*dambis*), including some not visited by Sir Aurel Stein. Rare specimens included a series of terra-cotta figurines of humped bulls definitely linking with finds at Mohenjo-daro. Trial trenches were sunk into a mound south of Panjgur; this proved to be a Buddhist settlement. In a rockshelter near Kapoto, 10 miles south of Kalat, chert flakes were excavated just above bedrock.

Anthropometric data, as well as front and profile photographs, were obtained on 34 Baluchis at Turbat, 103 Baluchis at Panjgur and 138 Brahuis at Kalat.

A collection of Baluchi ethnological specimens was purchased; native names were recorded. Kodachromes and black-and-white photographs present a picture of the land and the people. Mrs. Field tape-recorded Baluchi music. Zoological, botanical and geological specimens were collected.

The second phase of the Expedition was to make a similar reconnaissance along the dry Huqra River in eastern Bahawalpur near the Bikanir frontier of India. This gave a northeasterly cross-section between the Iranian and Indian frontiers directly through Mohenjo-daro. During this 500-mile sweep sherds were collected on many sites from Fort Derawar to Qaimpur. Photographs were taken of each fort

visited, especially of the towers, arches and brickwork.

From these two traverses new light will be thrown on the cultural and racial links between Southwestern Asia and the Indus Valley.

Guggenheim Fellowships

The awards for 1955-56 made by the Guggenheim Foundation include the following grants to scholars working in archaeology and allied subjects:

ARTHUR J. O. ANDERSON, Museum of New Mexico, Santa Fe. Studies of Aztec accounts of Spanish settlement in the Americas.

YURY ARBATSKY, Newberry Library, Chicago. Historical studies of music and musical instruments, from pre-Hellenic times to the fall of Constantinople.

ERNEST BENDER, University of Pennsylvania. Studies of the Old Gujarati language of India.

EMMETT L. BENNETT, JR., Yale University. Studies of the languages of ancient Minoan and Mycenaean inscriptions.

KENNETH J. CONANT, Harvard University. Studies of the Romanesque Abbey Church and Monastery of Cluny.

JACOB J. FINKELSTEIN, Yale University. Political and socio-economic conditions in the period preceding the fall of the first Babylonian Empire.

JAMES F. GILLIAM, State University of Iowa. The auxiliaries of the Roman imperial army.

ARTHUR E. GORDON, University of California, Berkeley. Latin inscriptions on stone of the period of the Roman Republic.

KATHERINE LUOMALA, University of Hawaii. Polynesian and Micronesian anthropology.

RICHARD H. MERRIAM, University of Southern California. Study of the strength of the concretes used in ancient Roman buildings.

GEORGE E. MYLONAS, Washington University. Excavations of the ancient Greek city of Eleusis.

JAMES H. OLIVER, Johns Hopkins University. History of Athens under the rule of Rome.

W. KENDRICK PRITCHETT, University of California, Berkeley. Ancient Greek battles and battlefields.

CYRIL S. SMITH, University of Chicago. A historical study of the development of metallurgy.

The Bloomington Meeting

Five anthropological societies—the Society for American Archaeology, the American Ethnological Society, the American Folklore Society, the Society for Applied Anthropology, and the Central States Division of the American Anthropological Society—collaborated in a joint meeting at Indiana University, Bloomington, Indiana, May 5 to 7, 1955. Several hundred attended, the local arrangements had been capably planned, and the meeting was much enjoyed by all. In addition to the usual business meetings, there was a reception given by the hosts, several society luncheons, and a joint banquet at which Dr. Alfred C. Kinsey gave an illustrated talk on "Ancient Peruvian Erotic Art."

For three days, morning and afternoon, four or five sessions ran concurrently. Of course the program was so arranged that the talks in the various fields did not conflict, and the present reporters attended primarily the sections devoted to archaeology. Almost all of these were presented in the six sessions under the auspices of the Society for American Archaeology. The two papers of archaeological interest given in other sections were "New Data on the Lagoa Santa Race" by Georg K. Neumann and "The Nature of Culture and Archaeological Inference" by Albert C. Spaulding and Elman Service.

Without exception, all the archaeological papers referred to America; the only one with any non-American connotations was by Robert M. Adams on "Institutional Patterns and the Growth of Civilization in Meso-America, Peru, and Mesopotamia." The cultural development in the three regions he finds to have been closely parallel but with considerable local deviation in details. Beginning as agricultural communities around small shrines, they passed through relatively similar stages—Formative, Florescent, Urban, Militaristic, and so on, culminating in great empires.

The Thursday morning session, devoted to "The Middle American and Circum-Caribbean Areas," opened with an illustrated talk by J. Charles Kelley on "The Cultural Affiliations and Apparent Temporal Position of the Schroeder Site, Durango, Mexico." This was a report of recent excavations

in the suburbs of Durango, important because the archaeology of this region is very slightly known, and it is near the northern limit of the higher Meso-American culture. Though this site belongs to the late-period Mexican Chalcihuities culture, some resemblances to Hohokam pottery of Arizona were noted. William J. Mayer-Oakes reported on "Excavations at El Risco, Mexico, D. F." At this occupation site in the Valley of Mexico numbers of cord-marked and fabric-impressed potsherds were found, hitherto unreported from Mexico; they apparently belong to the Aztec 2 and 3 periods. Loring M. Hewen spoke of the "Maya Walls of Cozumel Island." On this small island off the Yucatan coast, once considered sacred by the Maya, there are many long, straight, low stone walls; one was traced for eight miles. They are apparently neither land boundaries nor causeways, and no explanation of their purpose has been suggested. Though without pattern or regularity, most of them run northeast and southwest. "A Preliminary Report on the Archaeology of Isla Cubagua, Venezuela" was made by John M. Goggin and José M. Cruent. This island, just off the coast, showed three occupation periods, the earliest pre-ceramic, then a culture like, or almost identical with, Taino, and finally the Colonial Spanish. "A Survey of Bahamas Archaeology" was explained by Julian Granberry. Notes on this talk are not available, unfortunately, since the archaeology of these islands is very slightly known.

John C. McGregor began the Thursday afternoon session on the "Middlewest and Northeast" with an account of "An Archaeological Survey of the Illinois River Valley." This was a survey made in 1954 by the University of Illinois. A great many sites hitherto unreported were discovered. These belong to nine different culture periods: Archaic, Morton, Early Hopewell, Late Hopewell, Weaver, Bluff Culture, Middle Mississippi, Maple Hills, and Historic. The nature of each period was described. Raymond H. Thompson described "Microscopic Studies of Temper in Midwestern Pottery," a project done at the University of Kentucky. Tempering material may be positively identified by use of the binocular microscope. If the material is found locally, the pottery is then presumed to

be of local manufacture. Edward V. McMichael gave "An Analysis of the McKees Rocks Mound, Allegheny County, Pennsylvania." This large mound near Pittsburgh was rather carefully excavated some fifty years ago. Although most of the notes, labels, and photographs are now difficult to interpret, they indicate a very important site. Three phases extending from Adena to Middle Hopewell were encountered, containing over thirty burials, a few cremations, and quantities of artifacts of high quality.

"Some Archaic Complexes of the Upper Ohio Valley" were outlined by Don W. Dragoo, who described the results of the excavation of several sites in this region. Here the early population amalgamated with the later, and there was little outside contact and little change from the Archaic period on; Hopewell artifacts are unspectacular. Pottery occurred in the uppermost three of five levels in one rock shelter; the earliest was chert tempered, the second limestone, the last shell. William A. Ritchie then epitomized "The Northeastern Archaic—A Review." He reviewed the history of the discovery of the various foci of this pre-ceramic, pre-horticultural period of several thousand years' duration, and outlined the general characteristics of the period and the traits typical of the many sites and phases.

The session on Friday morning was devoted to the question of Early Man in America. Ripley P. Bullen opened it with a talk on "Florida Bone Beds and Their Relationship to Man." He reviewed the status of the beds at Vero, Melbourne and Seminole where human bones have been found, presumably in association with those of extinct animals, and of comparatively great age. The associations and age are still doubtful. Bones have also been found in caves and in solution cavities. Some Clovis-like projectile points have been discovered on higher ground where ancient human bones have not been found. George I. Quimby made "Some Comments on the Natchez Pelvis Find." This human pelvic bone was found a century ago and caused great controversy. Anthropologists until comparatively recently derided its claim to great age and association with extinct animals. Recent reappraisal by study of the bone and the region has

tended to accept it as of a late glacial period. Quimby searched for the exact site, and believes that it cannot now be located. "The Significance of the Sites at Medicine Creek, Nebraska, to Paleo-Indian Problems" was discussed by E. Mott Davis. Three important sites were discovered here between 1947 and 1953, all at a depth of about thirty feet. Projectile points of the ancient Plainview and Scottsbluff types were discovered, and the culture is known as the "Frontier Material Complex." One-reading radiocarbon tests give dates of 8540 and 7570 B.C.

The session was closed by Alex D. Krieger who gave an excellent "Evaluation of Some Recent Discoveries and Claims Bearing on the Antiquity of Man in America." The radiocarbon age of 23,000 years recently given to the Tule Springs site is not incredible, and the Midland skull is also extremely old, much older than Folsom, but it is not of primitive type. The finds at San Diego, however, are probably not artifacts, in his opinion.

The Friday afternoon session was devoted to a symposium on "Problems of Salvaging Archaeological, Historical, and Ethnological Data," sponsored by the Committee for the Recovery of Archaeological Remains. After "Opening Remarks on Behalf of the Committee" by J. O. Brew, nine speakers outlined the "General Situation and Problems." First, Frank H. H. Roberts, Jr., spoke on "The Missouri Basin." So many sites were discovered in the areas to be flooded that it was impossible even to test all of them. Lack of trained personnel was the principal problem. John M. Corbett then described the regions "Outside the Missouri Basin." These were mainly in the west and southeast. There were many fiscal difficulties. "Contributions and Losses in Salvage Archaeology" were discussed by Waldo R. Wedel. Over two thousand sites were placed on record in the half-million square miles surveyed since 1946. Sites of all types from archaic to historical were investigated, and a number of institutions and organizations collaborated. Many small archaeological collections were studied.

Ronald F. Lee spoke on "Government's Role and Responsibility." Both federal archaeologists and local professionals have been very helpful in the program. The necessity for salvage ar-

chaeology should be recognized and planned for in federal projects, with the cooperation of other federal agencies. "Cooperating Institutions and Their Problems" were discussed by John L. Champe. Local institutions can supply many facilities such as laboratories, equipment, storage space, offices, and publication outlets. The University of Nebraska aided thus greatly in the Missouri Basin Project. The paper of Marvin E. Tong, Jr., stressed the "Role of the Amateur and His Problems." The amateur can be of great assistance in surveys, especially when in groups such as state archaeological societies. In his talk on "Highway Salvage Problems in New Mexico and Arizona" Fred Wendorf described the very efficient cooperation by which archaeological sites destined for destruction in highway operations in these states are examined.

"Salvage of Ethnological Data and Its Problems" was discussed by Frederica de Laguna, based on recent work in Alaska. Since a projected power dam would prevent the migration and breeding of salmon, it was essential to salvage data on this important phase of native life. A brief "Recapitulation of Papers and Discussion" by the chairman, Frederick Johnson, closed the symposium.

The Saturday morning program was devoted to the southeastern states. John L. Cotter opened with an account of "The Jamestown Investigation—Work in Progress." Excavations at this historic site—which will celebrate its 350th anniversary in 1957—have been progressing for a number of years and important and interesting features are constantly being uncovered. The site of the first fort has apparently been eroded by the river. "Experiments in Checking Documented Dates against Dates Derived from Trade Goods" were reported by Carlyle S. Smith. He referred especially to exact data from firearms and cartridges. Stephen Williams spoke on the "Physiographic Regions and State Distribution in the Lower Mississippi Valley," and outlined the nine developmental periods. The region falls naturally into two parts, north and south of Memphis.

"A Lithic Complex from Northwest Florida" was described by Glenn T. Allen, Jr. This is a new complex of the Early Archaic Period, of which thirty-

one sites have been discovered. Only stone artifacts are known, but those of bone and shell may have eroded. Ground stone and pottery are lacking. The classification of the ten thousand sherds recovered was reported by William H. Sears in his paper on "The Etowah Site Ceramic Sequence in Southeastern Prehistory." There are four principal Etowah periods. "A Preliminary Report on the Fabrics from the Angel Mounds Site" was then given by Carol K. Rachlin. The fabrics themselves have not survived but are known from their impressions on pottery. Of the 1,689,031 sherds recovered, 19,687 are fabric-impressed, and 1318 of these were studied. There are four basic weaves: twining, wickerwork, plaiting, and knotted netting, the first being the most common; it occurs in four varieties.

The first paper of the Saturday afternoon session on "Western North America" was given by Elaine Bluhm and entitled "Mogollon Settlement Patterns." Five phases are recognized after the acquisition of agriculture about 200 B.C. Settlement patterns progressed from scattered dwellings to small undefended community houses and finally to high fortified sites. Blanche Miller then described "The Old Ones (Keet Seel)." This is a very large cave shelter with over 160 rooms. It was apparently abandoned before the incursion of the Navaho. "The History of the Indians of the Central Plains—Bio-anthropological Evidence" was the title of a stimulating paper by Georg K. Neumann. He sees three main periods: a culture of Woodland type about A.D. 700; one of southeastern cultural affinities about A.D. 1100-1300; the later Siouan peoples.

L. S. Cressman then presented a paper on "Archaeology of the Dalles Region, Oregon." The excavation of a deep site showed a long history of cultural change, in house types, in tools to meet ecological changes, and in ritual. Change from percussion to pressure flaking was early, the introduction of stone sculpture and cremation late. The meeting closed with an unscheduled paper by Preston Holder on "Change in Ceramic Stratigraphy in Cahokia." Excavations in a newly discovered village site indicate an earlier period than that of the great mound.

J. ALDEN MASON
CAROL K. RACHLIN



The Sceptre of Egypt. A Background for the Study of the Egyptian Antiquities in The Metropolitan Museum of Art. Part I: From the Earliest Times to the End of the Middle Kingdom, by WILLIAM C. HAYES. xviii, 399 pages, 229 figures, frontispiece and map. Harper & Brothers, in cooperation with The Metropolitan Museum of Art, New York 1953 \$12.50

Of some value are more recent books such as E. Baldwin Smith's *Egyptian Architecture*, a skeleton guide to further study, or Cyril Aldred's excellent little picture-books of Egyptian art, with their intelligent introductions and captions and fresh illustrations. William Stevenson Smith's *Egyptian Sculpture and Painting in the Old Kingdom* is the first really thorough study of any field of Egyptian art to appear in English, though it covers only a limited period, and his slender volume, *Ancient Egypt as Represented in the Museum of Fine Arts* [Boston], is considerably more than a museum guide: it is one of few introductory books that can be recommended to the beginner or to the intelligent amateur.

of Egyptian archaeology. Though, as its subtitle indicates, it is intended as "a background for the study of the Egyptian antiquities in the Metropolitan Museum of Art," the collections of that great institution are so comprehensive as to furnish a fairly complete outline of the civilization and art of Egypt. Dr. Hayes is one of our foremost Egyptological scholars, well versed in the ancient language and equipped with the experience that can be gained only by many years in the field. Few could discuss as well the historical background of the objects he describes or could give as clear-eyed an introduction to the vastly complex subject of Egyptian religion in so brief a space. His short analyses of the art of the periods covered are perceptive and sound and his remarks on the functions of objects betray a profound knowledge of archaeology. To give only random examples: the student can find here, clearly summarized, our present knowledge of the history and use of "canopic" jars, information otherwise scattered here and there in articles; he will find a clear presentation of the significance of the *shawabti*, of the sistrum and its connection with the cult of Hathor, of the ceremonial implements used in the rite of the "Opening of the Mouth," and of the nature of that rite. If he is interested in ships and boats, he will find an excellent discussion of their types and functions. One could go on indefinitely citing examples of archaeological information not easily available to the novice and certainly nowhere else concentrated in a single work. For the student who wants to go more deeply into the subjects treated, an excellent bibliography is provided.

transliterations of certain Egyptian words and proper names. In some, but by no means all cases, the more familiar version of a word is given in parentheses, though not always when it first appears and rarely in the indices. However sound philologically the transliterations adopted by the Metropolitan Museum may be, they are rarely or never met with in other publications, and the beginner is bound to find himself bewildered when confronted with Wen-is for Unas, In-yotef for Antef or Intef, Akhtoi for Khety, Nit for Neith, Khuf-wy for Khufu or the time-honored Cheops, not to mention the often recurring *ku* for *ka*.

ELIZABETH RIEFSTAHL
Brooklyn Museum

The Hand-Produced Book, by DAVID DIRINGER, 603 pages, 191 figures. Philosophical Library, New York 1953 \$15.00

212

manuscripts in various parts of the world, scripts and languages in which they were written, kinds of literature inscribed, ways by which they were illustrated and kinds of bindings employed. If all these elements were set against the background of the times in which they were created, then would we have a complete study of the hand-produced book. Obviously a vast field, how much does Dr. Diring cover?

It must be stated at the outset that *The Hand-Produced Book* cannot, nor was it meant to, stand alone. It is the second volume in a series begun by *The Alphabet* (1948) and to be continued by a third work, *Illumination and Binding*.

In the volume under review, the author interprets "book" as any medium for recording literature. He devotes individual chapters to books made of clay, papyrus, and leather and parchment; but paper, the other most widely used material, will be considered in a "forthcoming volume, *The Printed Book*," apparently another work in the series. (However, paper manuscripts are included in discussions of books in the Far East together with books produced by block and movable type printing.)

Dr. Diring then shifts from materials to regions but in many cases that necessitates reconsideration of matter included under materials. He begins with a chapter on "Greek and Latin Book Production" and follows this with the intriguing but illogically developed theme, "The Book Follows Religion." Starting with Christianity, especially as it progressed through the East, he continues with Hebrew and Arabic books. Further chapters cover "Ancient Middle East, Central and Southern Asia" and "Far East and Pre-Columbian America." Then he returns to the West with "Anglo-Celtic Contributions to the Development of the Medieval Book," which must of course be related to Greek and Latin books and to books made of parchment.

The areas are treated with varying degrees of fullness but in general the features covered are the material, form and content of the book with most attention paid to the last topic, sometimes related to the cultural history of the country. The descriptions are accompanied by more than two hundred illustrations, a valuable contribution.

The author has gathered an amazing amount of information but he did not

take time to organize it logically or present it interestingly. It is repetitious not only within itself but often repeats, practically verbatim, material in *The Alphabet*, as one discovers if he follows the scores of references to that work. Even more annoying is the insistence to "see" *Illumination and Binding*, a work not yet published. The author himself, therefore, points up the defects in his organization. Because he has segregated the several attributes of a book into several treatises he cannot develop the interrelationship of the various parts. Consequently his descriptions of individual books are often fragmentary.

With all its limitations, there is no doubt that this will be a useful reference work, especially for the lesser-known parts of the world.

BERTHA M. FRICK

Columbia University

Guatemalan Highland Site

The ruins of Zaculeu, Guatemala, by RICHARD B. WOODBURY and AUBREY S. TRIK, with an introduction by JOHN M. DIMICK and special contributions by CHARLES WEER GOFF, WILLIAM C. ROOT, T. DALE STEWART, and NATALIE F. S. WOODBURY. 2 volumes. xviii, 324 pp., 3 maps, 297 figures, 1 color plate. United Fruit Company, New York 1953

The excavation and restoration of Zaculeu, a site in the Guatemalan highlands near the modern city of Huehuetenango, was begun by the United

Fruit Company in 1946 and completed in 1949. The project was directed by John M. Dimick, and for the first two seasons Stanley H. Boggs was in charge of field work. Those who visited the project in its initial years and can appreciate the importance of Boggs' contribution to the work in its most difficult stages will regret that he has not received more recognition in this report and took no part in its preparation.

The report begins with an informal introduction by John M. Dimick describing the initiation of the project and its field arrangements. This is followed by a history of Zaculeu and the Mam people by Natalie F. S. Woodbury, based on documentary material. In the archaeological body of the report which follows, site description, architecture and graves are covered by Aubrey S. Trik, and artifacts are described by Richard B. Woodbury. In the section on artifacts is included a technical report on metals by William C. Root, and appended at the back of the book are sections dealing with physical anthropology by Charles Weer Goff and T. Dale Stewart.

It is impossible in a few words to do justice to the excellence of the reporting and the presentation. Particularly deserving of praise are Trik's isometric drawings of buildings and his illustrations of graves. Woodbury's detailed descriptions of artifacts, with frequent references to comparative material, also merit particular mention. There is no doubt that the monograph will serve

COINS AND MEDALS

from the beginning of coinage till about 1800 A.D.
Our carefully prepared and illustrated catalogues
and price lists are free for the asking.

CLASSICAL JEWELRY

an important collection of some eighty pieces is for
sale, also individual pieces. Correspondence invited.

NUMISMATIC FINE ARTS
EDWARD GANS
10 Rock Lane
Berkeley 8, California

as an important source of data for archaeological study for many years.

Unfortunately, it is designed for specialists only, and the reader interested in wider cultural problems or in the archaeology of adjacent areas will look in vain for a general summary and appraisal of the material, which in a work of this scope he is accustomed to expect. The final section by both principal authors entitled "Summary of important traits" is no more than a brief description of the sequent "phases" to which all material is referred. These "phases," according to the authors, are "arbitrary segments in the long chain of years and are characterized by minute differences—details of grave construction or of ritual equipment for example—rather than by changes in the social system or in the economy of the people." Since the report is limited to data on important graves and civic and religious buildings, it obviously does not cover all aspects of culture, but the authors show a singular contempt of inference when they characterize the temporal changes in the rich variety of their material as "minute." They make no attempt to discuss the sequence in relation to cultural context or to relate its content in any but a chronological way to the known remains from other sites. A general summary of the significance of the finds is entirely lacking. Possibly the efficiency of the field work ("Woodbury and Trik were a smooth team, consistently defeating time with a slick series of

double plays") interfered with the serious reflection that is needed for a sound appraisal of the results.

Some carelessness in editing is apparent and the half tone illustrations seem to lack brilliance and are not up to the standard of the book as a whole, which, in spite of its faults, remains a highly commendable and valuable work, showing sound archaeological method and well organized presentation of data.

TATIANA PROSKOURIAKOFF
Carnegie Institution of Washington

Greek Art

The Metropolitan Museum of Art: Handbook of the Greek Collection, by GISELA M. A. RICHTER. ix, 322 pages, 35 figures, 130 plates. Harvard University Press, Cambridge 1953. Paper edition \$10.00; cloth edition \$12.50

To Miss Richter is due much of the credit for creating in the Metropolitan Museum of Art an outstanding collection of classical antiquities. Under her curatorship, relinquished not so long ago, there was a constant inflow of important acquisitions which made a revision of her 1930 handbook increasingly urgent. The new publication is actually more than a revision. It limits itself to the Greek collection (including Roman copies of Greek works) and expands the number of illustrations to well over eight hundred small reproductions at the back of the book. The outline follows the present arrange-

ment of exhibition rooms, without specific reference to location of objects, and discussion therefore is ordered chiefly by chronology rather than by category, with complementary chapters to cover large-scale sculpture, seal-stones, coins and jewelry. A bibliographical appendix leads the way to fuller publication of objects in the *Bulletin of the Metropolitan Museum of Art* and elsewhere.

Many problems beset the compilation of a handbook, some of them formidable, almost all of them involving a choice of sacrifices. In present economic conditions, it is probably expensive which exerts the most wearisome pressure. The cost of the *Handbook*, no doubt cause for concern to the author, means that unfortunately it is not likely to tempt a visitor to make a spontaneous, over-the-counter purchase at the entrance to the museum. Therewith one important *desideratum* is unsatisfied. And can a detailed manual of so rich a collection be combined with a survey of Greek art (see p. 1) and yet remain a true museum handbook?

If one regards the book as a *Commentary on the Classical Collection*, the focus immediately sharpens. There is no uncertain image of a visitor working through the galleries with 158 pages of concentrated text. Instead, one sees novice, student and professional archaeologist profiting, at leisure in a library, from Miss Richter's great reserves of knowledge and experience. The novice is introduced to the pano-



For a Christmas gift of lasting pleasure . . .

Why not give **ARCHAEOLOGY** ?

Business Manager, **ARCHAEOLOGY**
608 Library Building
University of Cincinnati
Cincinnati 21, Ohio

I enclose check/money order for \$_____ to cover a gift subscription to **ARCHAEOLOGY**

1 year \$5.00

2 years (or two subscriptions submitted by one person) \$9.00

No extra charge for foreign subscriptions

Name _____

(Signed) _____

Street _____

Street _____

City _____ Zone _____ State _____

City _____ Zone _____ State _____

rama of Greek art in its major and minor aspects against an historical background, with the museum's collection for illustration. (Occasionally the account presupposes familiarity with Greek archaeology and its technical language, but passing mention of the Persian debris [p. 66], for example, should not seriously bewilder the uninitiated.) For the professional, the assemblage of so many illustrations with related text and bibliography makes a most welcome and handy reference work. Perhaps it is the student who benefits most of all, for here is compressed a wealth of coordinated information which pays due heed to the neglected but revealing minor arts.

FRANCES FOLLIN JONES

*The Art Museum
Princeton University*

Coinage of the Roman Empire

Roman Imperial Money, by MICHAEL GRANT. vii, 324 pages, 88 figures, frontispiece, 40 plates. Thomas Nelson, London 1954. £2 10s.

A group of studies on various aspects of the Roman imperial coinage. The general scheme is commentary on individual coins figured in the text with an abundance of supplementary material in the plates. Most of the work deals with the significance of types, though the economic system of Augustus, its metallurgy and metrology, are dealt with at some length and there is a brief summary of debasement at the end. About half the space goes to the Julio-Claudians, with treatment of Personifications and Anniversaries throughout the empire getting roughly a quarter each. Although too many topics are omitted for this to be considered a handbook, there is admirable thoroughness in making the volume understandable to any beginner. The end papers show a good map of the empire in the first century A.D.; there is a list of Roman emperors and a glossary of Latin terms; and explicit notes clear up special points as they occur. The writing has the author's characteristic verve and enthusiasm and it will be a dull reader who does not find the book interesting. Mr. Grant's optimism may sometimes outrun his data and the specialists will have reservations about some of his conclusions, but everyone will admire the plates with their attractive enlargements of important pieces,

and everyone will agree that the book is a useful and welcome addition to an area of numismatics that has almost unlimited possibilities for the enlightenment of antiquity.

ALFRED R. BELLINGER

Yale University

A Distinguished Archaeologist's Career

Saggi di Varia Antichità, by AMEDEO MAIURI. 459 pages + 15 pages of indices etc., 40 plates. Neri Pozza, Venice 1954 (Collezione di Varia Critica, Vol. XII) 3000 lire

It may be greeted as a remarkable and fortunate coincidence that at the very time John Howland Rowe's article, "Archaeology as a Career," was being sent to press for the Winter 1954 number of *ARCHAEOLOGY*, a house in Venice was issuing a volume which can well serve as counterpart to that article and, for those whose gaze is turned towards Italy, as in a sense its corrective, in that it views the problems from a different angle. It is the product of an archaeological administrator whose materials possess a strongly historical coloring and whose interests are largely human, including the use of the human element in conducting research.

ARCHAEOLOGY's article supplies the information and advice which the youthful aspirant to an archaeological career seeks; but admonition without example lacks something—techniques are acquired by watching the master—and this additional help will be found in Commendatore Maiuri's book. Its author has now arrived at the apex of his career after thirty years' tenure of the *Soprintendenza alle Antichità* of Campania and neighboring areas. By reissuing a selection from the articles in which he first formulated the nature of the problems he faced and then traced the successive stages of the measures adopted for their solution, he has made it easier for us to share in the intellectual processes which formed an integral part of them. Even though the beginner may feel too timid to aspire to the rare combination of qualifications possessed by this author, and can hardly hope for the unique opportunities for achievement which fell to his lot, still there is inspiration and encouragement in sharing even at second hand in one of the most brilliant scientific careers of our time.

The present volume claims a place all its own. The material results of Maiuri's work have been communicated to scientific circles by means of technical articles in the official journals, as well as the superb illustrated volumes on the Villa of the Mysteries and the House of Menander, soon to be followed, it is hoped, by the long-expected definitive work on Herculaneum. Parallel with these, his admirable literary gifts have enabled him to reach and enthrall a wider public by means of sketches or essays which from time to time have been gathered into highly readable volumes. The present publication falls into a class apart, somewhere between the other two: most aspects of the archaeology and the ancient cultural heritage of southern Italy are reviewed and discussed, and the fascinating story is unfolded of the successive stages in their interpretation which have been reached under the present administration. The forty plates are a delight to the eye and really illustrate the text.

It is to be hoped that the end of the story is not yet in sight, and that a long continuation of the series may be expected. Among the individual sites treated, Cumae, Pompeii and Herculaneum show largest; the time-span ranges from the Stone Age through the Ages of Bronze and Iron, those of Italic independence and Roman domination, down to the introduction of Christianity and its ultimate triumph and, finally, the wars of the Ostrogoths and Justinian's generals. The author's command of the literary and epigraphical sources is equal to his handling of the techniques of surface observation and excavation. Between the lines one can glimpse the tact and skill with which he has administered an important government agency and has organized the personnel at his disposal, including some of the finest workmen and technicians to be found anywhere. Under his guidance former cultures and past ages seem to come to life once more—the career has become a vocation. This is perhaps a different kind of archaeology from that which many readers of *ARCHAEOLOGY* have in mind: but even the beginner or the worker in far-removed sectors of the vast field of science embraced by this term may derive profit from this book.

A. W. VAN BUREN

American Academy at Rome

NEW BOOKS

Selected at the editorial offices from various sources, including bibliographical publications, publishers' announcements and books received. Prices have not been confirmed.

BALFOUR-PAUL, H. G. *History and Antiquities of Darfur*. 28 pages, 9 figures, map. Sudan Antiquities Service, Khartoum 1955 (Museum Pamphlet No. 3) 1s.

BATAILLE, GEORGES. *La peinture préhistorique. Lascaux ou la naissance de l'art*. 151 pages, 68 color figures. Skira, Geneva 1955 (\$20.00)

BEAZLEY, J. D. *Attic Vase Paintings in the Museum of Fine Arts, Boston, Part II*. 2 volumes. ix, 104 pages, 10 figures, 16 plates, 16 folio plates. Oxford University Press, London 1954

BLOCH, RAYMOND. *L'art et la civilisation étrusques*. x, 231 pages, 50 figures, 33 plates. Librairie Plon, Paris 1955 900 fr.

BOVINI, GIUSEPPE. *San Vitale in Ravenna*. 23 pages (unpaginated), 8 figures, 45 plates, 8 color plates. Silvana, Milan 1955 2000 lire

BRONEER, OSCAR. *Corinth. Volume 1, Part 4. The South Stoa and its Roman Successors*. xix, 167 pages, 67 figures, frontispiece, 54 plates, 22 plans. American School of Classical Studies at Athens, Princeton 1954 \$15.00

BUSCHOR, ERNST. *Bilderwelt griechischer Töpfer*. 61 pages, 62 figures. R. Piper & Co Verlag, Munich 1954 DM 2.50

CAMÓN AZNAR, JOSÉ. *Las artes y los pueblos de la España primitiva*. xi, 935 pages, 886 figures. Espasa-Calpe, Madrid 1954 600 pesetas

CHUBB, MARY. *Nefertiti Lived Here*. 195 pages, 16 line illustrations by RALPH LAVERS. Thomas Y. Crowell Company, New York 1955 \$3.50

Corpus Vasorum Antiquorum. Italia 23: Capua, Museo Campana, fasc. 2. By PAOLO MINGAZZINI. 8 pages, 23 plates. La Libreria dello Stato, Rome 1954

Corpus Vasorum Antiquorum. Italia 24: Napoli, Museo Nazionale, fasc. 3. By ANNA ROCCO. 18 pages, 32 plates. La Libreria dello Stato, Rome 1954 (\$9.80)

CROME, JOHANN FRIEDRICH. *Bemerkungen zur griechischen Ikonographie*. 14 pages, 5 figures. Walter de Gruyter, Berlin 1954 DM 3.50

IVANOV, TEOFIL. *Une mosaïque romaine de Ulpia Oescus*. 36 pages, 22 plates (13 in color). Bulgarian Academy of Sciences, Sofia 1954 (Monuments de l'Art Bulgare, Vol. II)

KATZ, SOLOMON. *The Decline of Rome and the Rise of Medieval Europe*. ix, 164 pages, 2 maps. Cornell University Press, Ithaca, New York 1955 (The Development of Western Civilization) \$1.25

LAMBERT, MARJORIE F. *Paa-ko, Archaeological Chronicle of an Indian Village in North Central New Mexico. Parts I-V, with Part VI by SPENCER L. ROGERS*. 183 pages, 54 figures, 39 plates, 13 tables. The School of American Research, Santa Fe, New Mexico 1954 (Monograph 19, Parts I-V)

LEHMANN, KARL. *Samothrace. A Guide to the Excavations and the Museum*. 101 pages, 51 illustrations, sketch plan. New York University Press, New York 1955 \$2.50

LIBBY, WILLARD F. *Radiocarbon Dating*. Second edition. With a chapter by FREDERICK JOHNSON. ix, 175 pages, 11 figures, 7 tables. University of Chicago Press, Chicago 1955 \$4.50

LULLIES, R., editor. *Neue Beiträge zur klassischen Altertumswissenschaft. Festschrift zum 60. Geburtstag von Bernhard Schweitzer*. 419 pages, 38 figures, 91 plates. W. Kohlhammer, Stuttgart 1954

MICOFF, VASSIL. *Le tombeau antique près de Kazanlık*. 42 pages, 31 figures, 35 plates (11 in color). Edition de l'Académie Bulgare des Sciences, Sofia 1954 (Monuments de l'Art en Bulgarie, I)

MOLLARD-BESQUES, S. *Musée National du Louvre, Catalogue raisonné des figurines et reliefs en terre-cuite grecs et romains. I. Époques préhellénique, géométrique, archaïque, et classique*. xii, 184 pages, 108 plates. Edition des musées nationaux, Paris 1954

NICOSIA MARGANI, MARGHERITA. *La stele pelasga di Lemno*. 56 pages, 1 plate. Baglieri, Comiso 1954 800 lire

PALLOTTINO, MASSIMO. *Etruscologia. Third edition*. xv, 393 pages, 64 plates. Hoepli, Milan 1955 2000 lire

POUILLOUX, JEAN. *Recherches sur l'histoire et les cultes de Thasos. Volume I. De la fondation de la cité à 196 avant J.C.* 491 pages, 48 plates. De Boccard, Paris 1954 (École française d'Athènes, Études Thasiennes, III)

REISNER, GEORGE ANDREW (completed and revised by WILLIAM STEVENSON SMITH). *A History of the Giza Necropolis, Volume II. The Tomb of Hetep-Heres, the Mother of Cheops. A Study of Egyptian Civilization in the Old Kingdom*. xxv, 107 pages, 147 figures, 55 plates. Harvard University Press, Cambridge, Mass. 1955 \$25.00

ROBERT, LOUIS, and JEANNE ROBERT. *La Carie, histoire et géographie historique avec le recueil des inscriptions antiques. Volume II: Le plateau de Tabai et ses environs*. 452 pages, 65 plates. Adrien Maisonneuve, Paris 1954

ROGERS, SPENCER L. *The Physical Type of the Paa-ko Population. Part VI of Paa-ko, Archaeological Chronicle of an Indian Village in North Central New Mexico*. 48 pages, including 13 pages of plates and 3 of figures, 23 tables. The School of American Research, Santa Fe, New Mexico 1954 (Monograph 19, Part VI)

SANTANGELO, MARIA. *L'antiquarium di Orbetello*. 136 pages, 99 figures, 6 plates, 1 map. Rome 1954 600 lire

SHINNIE, P. L. *Medieval Nubia*. 18 pages, 9 figures. Sudan Antiquities Service, Khartoum 1954 (Museum Pamphlet No. 2) 1s.

SIVIERO, RODOLFO. *Gli ori e le ombre del museo nazionale di Napoli*. vii, 153 pages, numerous text figures, 274 plates (22 in color). Sansoni, Florence 1954 (Le Opere d'Arte Recupérate, Vol. II) 15,000 lire

STARK, FREYA. *Ionia. A Quest*. xxiv, 263 pages, 62 plates, 1 map. Harcourt, Brace and Company, New York 1955 \$6.00

SWAHN, JAN-ÖJVIND. *The Tale of Cupid and Psyche*. 493 pages, 7 maps (separate sheets). C.W.K. Gleerup, Lund 1955 40 Sw.Cr.

VIEYRA, MAURICE. *Hittite Art, 2300-750 B.C.* 92 pages, 122 plates. Alec Tiranti, London 1955 15s.

VIGHI, ROBERTO, and FRANCO MINISSI. *Il nuovo museo di Villa Giulia*. 67 pages, 69 plates. A. Nardini, Rome 1955 1000 lire

WILLEY, GORDON, and CHARLES MCGIMSEY. *The Monagrillo Culture of Panama. With an Appendix on Archaeological Marine Shells by ROBERT E. GREENGO*. xiii, 158 pages, 12 tables, 34 figures, 20 plates. Peabody Museum, Cambridge 1954 (Papers of the Peabody Museum of Archaeology and Ethnology, Harvard University, Vol. 49, No. 2) \$4.65

WOOLLEY, SIR LEONARD. *Excavations at Ur*. 262 pages, 22 figures, 32 plates. Thomas Y. Crowell Company, New York 1955 \$5.50

WORMINGTON, H. M. *A Reappraisal of the Fremont Culture with a Summary of the Archaeology of the Northern Periphery*. 200 pages, 65 figures, 1 map, 5 tables. Denver Museum of Natural History, Denver 1955 (Proceedings, No. 1) \$3.00

The Ancient Inhabitants of Jebel Moya

by *Ramkrishna Mukherjee*
C. Radhakrishna Rao
J. C. Trevor



An Occasional Publication of the Cambridge University Museum of Archaeology and Ethnology

\$7.50, through your bookseller

CAMBRIDGE UNIVERSITY PRESS
32 East 57th Street
New York 22, N. Y.

Jebel Moya in the Sudan was excavated between 1911 and 1914 by the late Sir Henry Wellcome's expedition. The human remains (of the first millennium B.C.) found there are the subject of this book.

Its primary object is to determine the physical types represented by the ancient Jebel Moyans and their links with other African peoples, past and present. It also forms perhaps the most comprehensive guide to method in physical anthropology yet published.

The first half of the book contains numerous examples of the application of modern quantitative procedures to such technical problems as the sexing of various bones, the comparability of measurements taken by different observers, and the statistical analysis of anthroposcopic, or non-metrical, data.

The second half outlines the steps necessary for the proper biometric treatment of material in which inferences have to be made from a sample regarding the nature and characteristics of the population from which it is drawn.

The Society for the Promotion of Hellenic Studies (founded 1879)

The Society for the Promotion of Roman Studies (founded 1910)

The Societies were founded to promote knowledge of the Hellenic and Roman worlds, their archaeology, art and history.

Each Society holds quarterly meetings and publishes a *Journal* containing well-illustrated contributions of great importance to research, and reviews of recent publications. They also maintain, jointly, a Library of some 25,000 books.

The annual subscription of £2 entitles Members
to receive current issue of the *Journal of Hellenic/Roman Studies*.
to use the Library,
to attend all meetings of the Societies.

For particulars apply to the Secretary of the appropriate Society,

50 Bedford Square • London, W. C. 1, England

Beyond the reach of cruise ships

*and the individual traveler—repeating for the twentieth time
a fabulous itinerary featuring the cities, sites and
scenic beauty of the magic interiors of Egypt,
the Middle East, Greece, and Turkey . . .*

1956 ODYSSEY

FEBRUARY 25 TO APRIL 16

Since 1926, the Odyssey has taken more than twenty-five hundred Americans to places usually reserved for fireplace dreaming. In comfort and at moderate cost.

The Main Odyssey (February 25-April 16) is limited to twenty-five members and will visit Egypt, Lebanon, Syria, Iraq, Jordan, Greece. A post-Odyssey extension of ten days will offer Turkey.

Lands bordering the Eastern Mediterranean have changed. For in this colorful region of intellectual interest and scenic beauty you now find good roads, good hotels, good food, good automobiles. And the occasional use of American planes, owned and operated by regular lines, saves time and spares the tedium of empty miles.

Odyssey rendezvous points are Rome and Cairo. Members have the choice of TWA super-Constellations or the fine ships of the Italian and American Export Lines.

Odyssey is now associated with Frew Hall Travel, Inc. In addition to operating its own groups, it is also able to plan individual travel both to the usual and to out-of-the-way parts of the world.

Rome
Cairo
Memphis
Sakkarah
Assuan
Philae
Luxor
Karnak
Dendera
Beirut
Sidon
Tyre
Beaufort
Byblos
Cedars
Baalbek
Damascus
Palmyra
Homs
Water wheels of Hama
Aleppo
Latakia
Crusader Coast
Krak des Chevaliers
Baghdad
Babylon
Ctesiphon
Kerbela
Khadimain
Petra
Jerusalem
Bethlehem
Jericho
Jerash
Athens
Corinth
Mycenae
Tiryns
Epidauros
Sparta
Mistra
Olympia
Delphi
Knossos
Delos
Smyrna
Pergamon
Sardis
Ephesus
Priene
Istanbul
Paris

B. D. MacDonald

ODYSSEY CRUISES, INC.

67 East 59th Street, New York

Murray Hill 8-0037

ama

s

~~~~~